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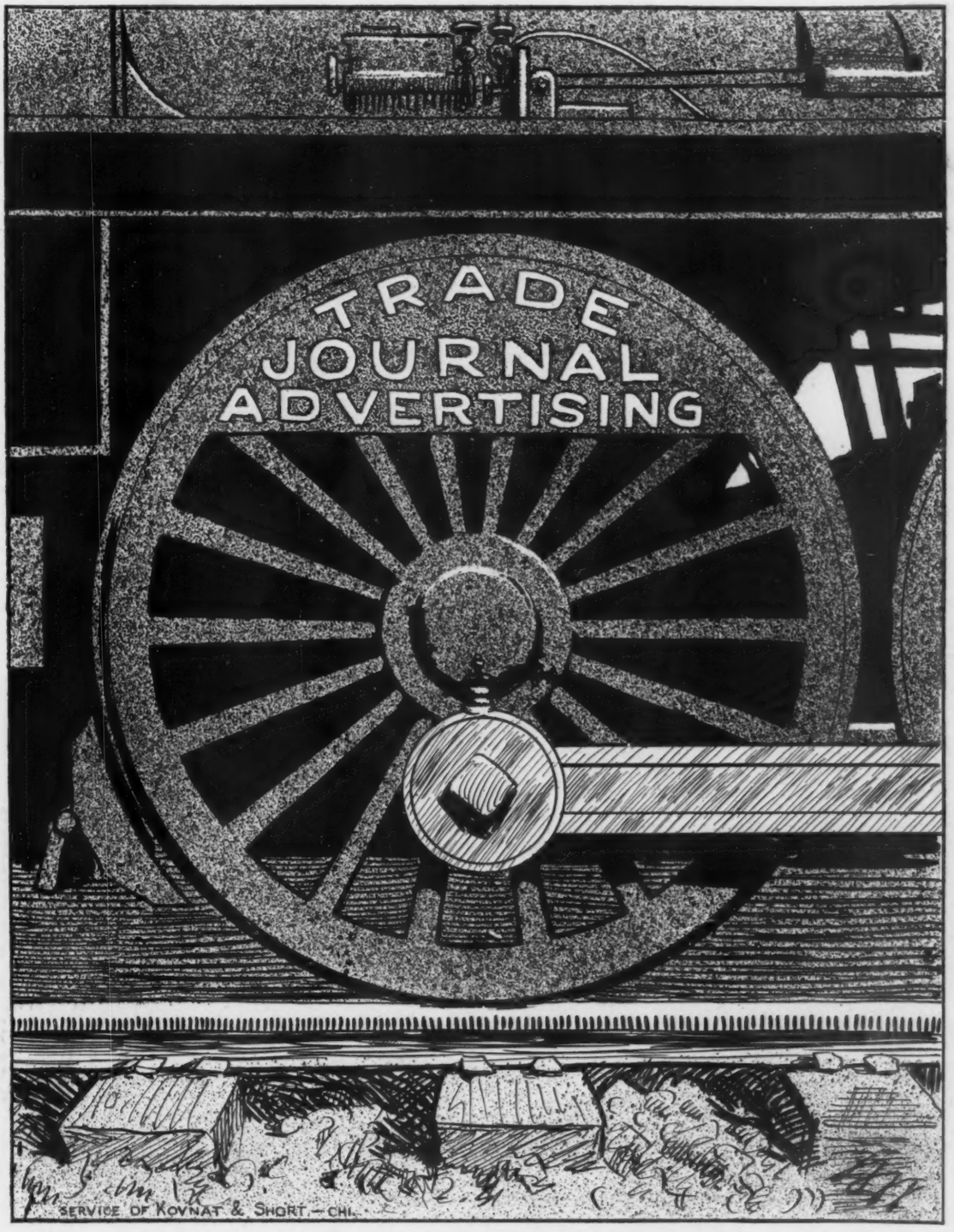
Rock Products

DEVOTED TO

Concrete and Manufactured Building Materials

Volume XII. CHICAGO, ILL, SEPTEMBER 22, 1912. Number 3.



THE WHEEL OF PROGRESS

Bay State Brick and Cement Coating

will protect all concrete or cement construction against damage by moisture, will retard fire, give your building any tint desired, may be used as a tint on brick or wood, is equally advantageous on stucco or concrete houses, in mill, bridge or sewer construction. Send at once for booklet No. 16.

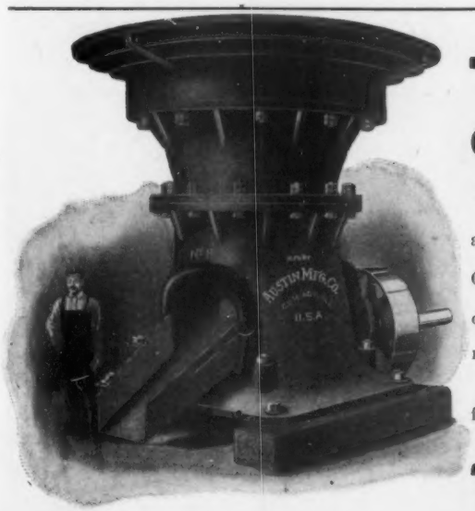
It was used here:

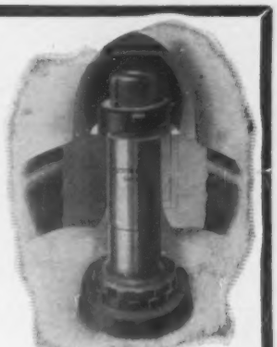
Mrs. O. H. P. BELMONT'S CITY RESIDENCE
Hunt & Hunt, Archts.
Two coats on Exterior, Basement and Servants' Quarters—Cement Coating and No. 2 Enamel

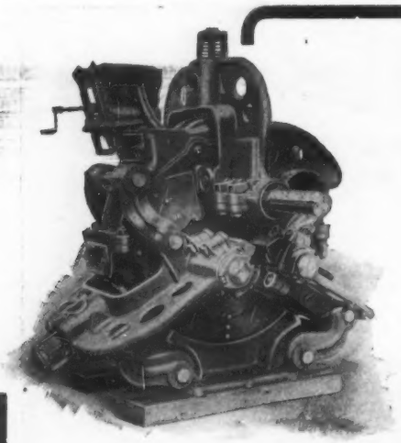
WADSWORTH, HOWLAND & CO., Inc.
Paint and Varnish Makers and Lead Corroders,
82-84 Washington St.,
Boston, Mass.

WIRE WHEELS mean nearly 70% more tire mileage over wooden wheels because the bare rims and wire spokes radiate the heat; and further, they softly float over obstructions while wooden wheels rigidly bounce. Wire wheels are much stronger by actual test, and are also considerably lighter, especially at the rim and this materially economizes engine power. Eighty per cent of recent Grand Prix racing cars were equipped with wire wheels; and this is about the percentage of wire wheels used on all pleasure cars in Europe. They are destined to become universal as their beauty, economy and engineering advantages make them the only correct wheel for automobile use. You should insist upon having them on your car. Write for our *American Wire Wheel News*, fully describing all makes and methods of manufacture, and how you can adapt them to your car.

Frank Baackes, V. P. and G. S. A.
72 West Adams Street Chicago







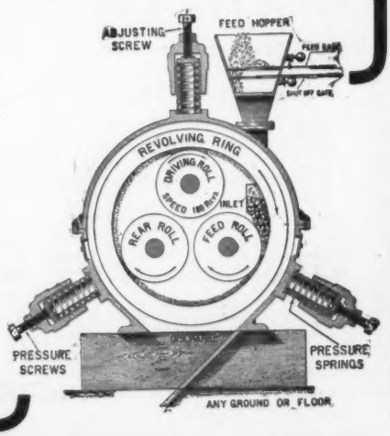
MAXECON

Means MAXimum of ECONomy

Years of experience with the assistance of our hundreds of customers has found THE SOLUTION OF GRINDING HARD MATERIALS. The MAXECON PULVERIZER combines highest EFFICIENCY, greatest DURABILITY and assured RELIABILITY. Uses the LEAST HORSE POWER per capacity. Embodies the features of our Kent Mill with improvements that make it MAXECON.

WE DO NOT CLAIM ALL of the CREDIT for this achievement

We have enjoyed the valuable suggestions of the engineers of the Universal Portland Cement Co. (U. S. Steel Corp.), Sandusky P. C. Co., Chicago Portland C. Co., Marquette Cement Mfg. Co., Western P. C. Co., Cowham Engineering Co., Ironton P. C. Co., Alpena P. C. Co., Castalia P. C. Co., Pennsylvania P. C. Co., any many other patrons.



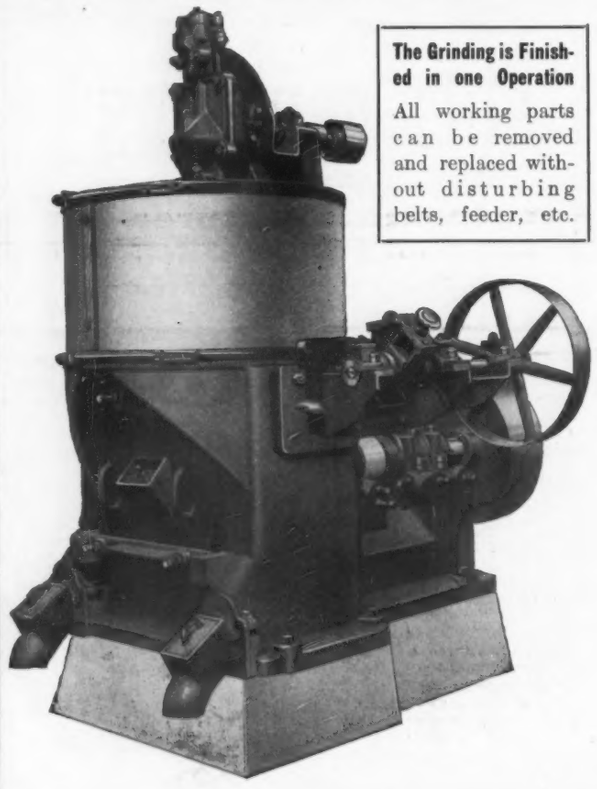
THE RING WOBBLES.

The FREE WOBBLING POUNDING RING instantly and automatically ADAPTS its position to the variations of work.

Its GRINDING ACTION is DIFFERENT than any other; besides the STRAIGHT rolling action of the rolls, the SIDE to SIDE motion of the ring makes the material subject to TWO crushing forces and DOUBLE OUTPUT results.

KENT MILL CO.

10 RAPELYEA ST., BOROUGH OF BROOKLYN, N. Y. CITY
LONDON, W. C., 31 HIGH HOLBORN
CHARLOTTENBURG 5, WINDSCHEID STRASSE 31, BERLIN



The Grinding is Finished in one Operation

All working parts can be removed and replaced without disturbing belts, feeder, etc.

BONNOT PULVERIZER

Grinds and Screens Limestone, Raw Lime and Hydrated Lime

Does it at One Operation. Gives You Any Desired Fineness

GRINDING LIME IS LARGELY A SCREENING PROPOSITION. THE BONNOT PULVERIZER HAS THE LARGEST SCREENING SURFACE AND CONSEQUENTLY THE GREATEST CAPACITY.

NO OTHER MACHINE LIKE IT IN THE ACCESSIBILITY OF SCREEN AND GRINDING PARTS.

No. 4 Catalog Explains These Advantages

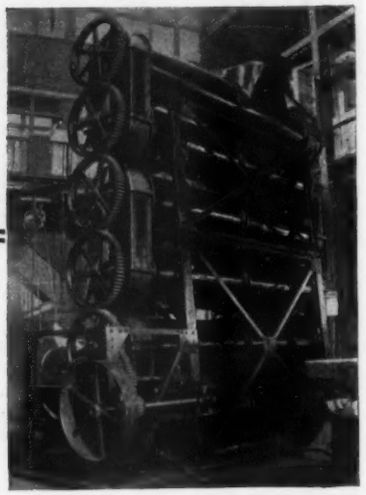
THE BONNOT COMPANY

909 N. Y. Life Bldg.
KANSAS CITY, MO.

CANTON, OHIO

HYDRATED LIME

Listen to this Mr. Dealer



KRITZER CONTINUOUS PROCESS

Promoting the Sale of Hydrated Lime means this to you:

First, it means increased profits in your business. Every concrete worker can do better work with hydrated lime, and he can do better work in less time. Tell him this. Tell him he can make more money. Tell him his work will be impervious to moisture, that his work will look better, in fact, be better. Tell them hydrated lime can be used for any purpose where other lime is used, can be used better, and is useful in many other ways. Live retailers everywhere are handling hydrated lime and educating their trade in the economy of its use. Hydrated lime is an ideal product to handle and you want to sell more of it. You can do this if you tell your trade what can be done with it.

Ask any up-to-date lime man what process and machinery for the making of hydrated lime is the best and he will say

The KRITZER WAY is the Right Way

The Kritzer Company

115 Adams Street :: Chicago, Ill.

ROCK PRODUCTS

ESTABLISHED IN LOUISVILLE, KY. 1902.
DEVOTED TO CONCRETE AND MANUFACTURED BUILDING MATERIALS.

Volume XII. **CHICAGO, SEPTEMBER 22, 1912.** **Number 3**

Publication day, 22nd of each month.

THE FRANCIS PUBLISHING COMPANY
EDGAR H. DEFEBAUGH, Prest.
Seventh Floor, Ellsworth Bldg., 537 South Dearborn St., Chicago, Ill., U. S. A.
Telephone Harrison 8086, 8087 and 8088.

EDITORS:
EDGAR H. DEFEBAUGH, FRED K. IRVINE.
MANAGING EDITOR.
CHARLES D. WARNER.
BURDIS ANDERSON, Manager.

Communications on subjects of interest to any branch of the industry are solicited and will be paid for if available.
Every reader is invited to make the office of Rock Products his headquarters while in Chicago.
Editorial and advertising copy should reach this office at least five days preceding publication date.

TERMS OF ANNUAL SUBSCRIPTION.

In the United States and Possessions and Mexico.....$1.00
In the Dominion of Canada and all Countries in the Postal Union..... 1.50
Subscriptions are payable in advance, and in default of written orders to the contrary, are continued at our option.
Advertising rates furnished on application.

Entered as second-class matter July 2, 1907, at the Postoffice at Chicago, Illinois, under Act of March 3, 1879.

There are rare instances here and there where a man's work and surroundings are so attractive that he would rather be at work than not. What we need is more of this, both in the office and in the factory—more striving to make the surroundings and the sentiment about work so in harmony that instead of regarding it as drudgery we shall esteem it a privilege.

We have from a correspondent in Texas announcement of the fact that experiments are being made there by the government road department with molasses for road surfacing. Such roads might be fast in the summer, but how about January, when molasses is slow? In the summer molasses roads would be covered with flies, but there are none on concrete roads.

The car shortage situation is developing a condition that is anything but encouraging to manufacturers of building material. Ample warning was given and in accordance with the situation as it appeared several weeks ago the retailer was advised to lay in his stocks, and many did so. During the coming month little assurance can be given that shipments can be made promptly. The railroads are doing their best to handle the business, and shippers are cooperating with them so far as possible.

Are you getting all the publicity that is due you from your local newspaper? The wide-awake dealer uses the regular advertising columns of his home publication to acquaint the readers of his community with the fact that he can supply anything in the building material line. But when an order of which he can justly feel proud is received, does he call on the local publisher and give him the news? Continually keeping your name before the people is a sure way to get your share of the orders that some day will be placed in your town.

The thing that wins is pleasing personality, the personality that makes the customer ask for you when he enters the office, gives you a quiet tip when you are about to make a mistake that will make you lose the order, or perhaps lose money on the job; makes him tell his friends about you and your pleasant, accommodating ways. It costs less to be pleasant than it does to be gruff, for your physical system needs it for your own good as well as for the good of your business. So try it. You wouldn't hesitate to pass your customer a cigar; try passing him a smile.

The most trifling actions that affect a man's credit are to be regarded. The sound of your hammer at 5 in the morning, or 9 at night, heard by a creditor, makes him easy six months longer; but if he sees you at a billiard table, or hears your voice in a tavern, when you should be at work, he sends for his money the next day.—Benjamin Franklin.

It is said that a reasonable degree of self-conceit is better than much gold, because it gives contentment. The trouble with this idea is that it is hard for a man to stop when he has acquired a reasonable quantity. He is very apt, ere long, to develop signs of incipient megalocephalitic degeneration—which in ordinary every-day ROCK PRODUCTS English is "swelled head."

A BIG ADVANTAGE

A young man with practical knowledge in his head, skill in his hands and health in his body, is his own letter of recommendation, diploma, and reference. Mix him up with ninety millions of others, and you can find him again, as he will have a habit of being at the top. Throw him on a desert island, without a country and without a name, and he will soon be at the head of something. He does not go whining up and down the land blaming fortune and saying he has no chance, but goes out and does something, and then does it again and better. Men that can do things either with head or hands are the men that are wanted, and the demand is as great now as it has been any time since the first sunrise.

TRADE PAPER ADVERTISEMENTS

"I only recently began to read trade paper advertising," said a dealer not long ago. "I kept the ads more as a directory of the trade. But nowadays there's getting to be such live business-like stuff in some trade-paper advertising that I feel I'm missing something if I don't look them over."

This dealer went on to say how he once got an idea from a live trade-paper ad that induced him to alter his basic plan of doing business. "Some advertisers are hiring people to write their trade-paper ads who have such good ideas that I would feel delighted to get them out to lunch and ask their advice about various matters. And my trade paper is more valuable to me, because many of its ads are so full of real ideas."

INCREASING YOUR BUSINESS

There are only two ways you can increase your business; you must either get new customers, or get more business from old customers.

There are only two ways to get new customers; either sell them what you already have to sell, or provide something else for them to buy.

There are only two ways of getting more business from old customers; sell them more of what you are now selling them, or sell them something you are not now selling them.

Advertising brings new customers for what you already have to sell. It often causes you to improve your product or the varieties of your goods, and so extends your business. It causes old customers to buy again, to speak of your wares to others, and to buy other things from you. It forces you to consider how your proposition compares with that of your competitors, and so lets in new ideas and policies, all making for a larger and more successful business. It makes you build up the efficiency of your selling force to take care of the new business, and in turn helps to develop the old business.

At every point, then, advertising helps business. It seldom gets credit for all the influence it has in a business, but it is the real cause of a great deal of fundamental improvement in all parts of a business. Try ROCK PRODUCTS. It's your paper.

EDITORIAL CHAT

FORD AFTER BIG GAME.

We have a letter from W. H. Ford, of the Canada Cement Company, Montreal, giving fair warning that he was about to start into the wilderness "to get anything that swims, walks, creeps or flies" that comes before him. Mr. Ford says a friend has a moose tied to a tree for him and all he has to do is to come along and shoot it.

He says in another letter: "Here is a novel use for cement for a new industry; the exact title is as follows: Cie Zootechnique de Labelle (Ltee), Elevage des Animaux a Fourrure, Macaza, P. Q., which, played on a flute or translated into English, means:—The Zoological Company of Labelle, Ltd., Raisers of Fur Animals. These people came in to see us this morning and got an estimate on the cement required to build a wall 8 feet high around an island situated in a lake in the Laurentian Mountains, northeast of Montreal, for the purpose of keeping enclosed mink, which they are raising. They had been using wire netting, but their business is growing, and the number of minks raised increased to such an extent that the wire netting is not satisfactory—it's too risky; they get out and swim away, so they decided to use cement, which will take several thousand barrels. They started last year with twenty he and twenty she minks, and already they have forty additional ones, and if this keeps up, it will be like 'Pigs is Pigs,' which, if you haven't read, let me know, and I'll send it to you immediately.

The Winchester Granite Brick Co., Winchester, Ky., has just completed another new aerial tramway for the handling of sand, which will bring their capacity up to twelve cars a day. The new tramway was furnished by the Broderick & Bascomb Co., St. Louis, Mo. The Winchester Granite Brick Co. reports that they have about all the business they can take care of. Speaking of general conditions, they say: "Old Kentucky looks very fair. Abundant crops, at high prices, ought to send things along at a good gait from this time on. Farmers are building tobacco warehouses and silos right along.

TOMES IN NEW FIELD.

The retirement of P. Austen Tomes as superintendent of the advertising department of the Atlas Portland Cement Company is a distinct loss to the creative work in placing cement attractively before the consumer, as well as dealers, contractors and architects. Mr. Tomes has been connected with that concern for five years and resigned on September 1, to become vice-president of the Cement Products Company, of New York City, in which he is largely interested. We know his activity in the advertising field will add to the work in the New York territory in introducing and producing a greater field for cement products.

Austen Tomes, as we all know, is a high-class, aggressive business chap, who, under the guidance of the splendid management of the Atlas, has grown from a boy, as it were, to a strong man in the field with which he has been connected. We are pleased to know he still will be actively in the cement industry.

Mr. Tomes is about 35 years of age and has a great future ahead of him. He has the best wishes of ROCK PRODUCTS in his new activity. We say so now because, while he was with the Atlas, he gave it his whole time and attention; but he has always been interested in the success of the cement tile and no doubt will add to the impetus of the greater success of that material in the Manhattan district. Mr. Tomes is well and favorably known in the trade, and while we will miss him at some of the trade conclaves, we hope to hear his voice and note his effort in the cement consumers' conventions more than ever.

LEROY A. KLING MAKES CHANGE OF BASE.

Leroy A. Kling, who has been connected for some time past with two well-known crusher companies in Cedar Rapids, Iowa, has just accepted a position with the Wheeling Mold & Foundry Company, of Wheeling, W. Va., as sales manager of the road machinery department. This is the concern that has built so much of the important machinery for the Panama Canal. They will eventually manufacture a complete line of road building machinery, including a modern crusher, adjustable to crush to any size, pulverizers, rolls, screens, elevators, trucks and graders. It is needless to speak for the quality of these products, as the company has a reputation for turning out high grade machinery. Mr. Kling announces that his connection with these people begins at once.

EDGAR H. BALL.

One of our visitors this week was W. E. Burke, sales manager of the Three Forks Portland Cement Company, Trident, Mont.

Mr. Burke had a business visit East and naturally came in to the ROCK PRODUCTS' office to kind of renew acquaintance and see what was in the Eastern atmosphere. He reported that Montana was making wonderful progress; the influx from other cities was building up towns, farms were being settled and the result has been a splendid demand for materials of all kinds. This company manufactures 1,800 barrels of cement a day. However, they do not depend wholly on their state as they ship as far East as Bismarck, N. D., and the Coast. Like Eastern manufacturers, their demand has been very good this year, and the result is stocks are very low. The prospects for fall business were never better, and you know yourselves when towns of 2,000 people will spring up in several years, like Three Forks has, that the building material business must be active.

Mr. Burke says that ROCK PRODUCTS is his instrument of communication between the rest of the world and it would not seem like coming home had he not dropped in and visited with our editorial force. The Three Forks company, with an excellent manufacturing capacity, located on the Northern Pacific and Milwaukee roads, anticipates that the demand will not only keep its factory busy but will in time require it to increase its production. However, the fact that Eastern values have been so low for twelve months has kept its prices down to where the margins were very light. "And, in fact," he said, "I never experienced a condition so unsatisfactory as prevailed the first part of this year, owing to low values. However, things are improved all along the line now, and we feel very sanguine as to the future."

Gaston Daus, who for fifteen years was located with Lesley & Trinkle, of Philadelphia, of Giant Portland Cement Company, is now the Philadelphia, sales agent for the Lehigh Portland Cement Company.

Morris Koch, of the large builders' supplies firm of Koch & Lambe, on Armitage avenue, Chicago, Ill., has been confined to his residence since the last of August with an acute attack of indigestion. He is convalescent and will be in harness again by the last of this month.

Harvey J. Hill, 7435 Harvard avenue, Chicago, cement inspector for the Government of the Philippine Islands, has returned to Chicago. Mr. Hill was in the Islands a little over two years.

J. B. Stewart, of Atkins, Iowa, and H. P. North, La Porte City, Iowa, will open a factory for the manufacture of cement products at La Porte City.

EDGAR H. BALL DIES.

For many years it had been a pleasure to know Edgar H. Ball. The first acquaintance of the writer with him ripened into friendship in the early days when the Chicago Belting Company was organized by Charles Allis, James Maloney and Edgar H. Ball. It seemed like the days were too short since that seventeen years ago when we learned to know this clever gentleman—this friendly friend. It was a very sad day, on the 26th of August, 1912, when Edgar H. Ball was laid to rest.

Mr. Ball had been closely associated with the business of the Chicago Belting Company all these years, and while in failing health for a year or more was the active vice-president and interested counsel of this institution. During the days of upbuilding to prosperity, hard knocks and finally the success of the Chicago Belting Company, Edgar H. Ball was at the helm. He was quiet and retiring, but you always felt that he was a friend without words that you could bet on. Friends are scarce—the kind that you can tie to—and when you lose one it is just like the breaking of the closest tie. Would that we should think more and act more, and be closer to those we appreciate; for when the Great Commander calls them home we have them no more.

Life has its tragedies, its happy days and its sorrowful nights, but a true friend shines forth like the Eastern star in the heavens on a cold, crisp night with a sky full of small stars that do not compare with the one, two, three or four friends who are your own. Edgar H. Ball was a real friend, and those of us who knew him best bow our heads and mourn in deep sympathy with the wife and son who realize, with us, that in the loss of Edgar H. Ball, husband, father and friend, it was a distinct loss to all of us.

N. B. S. A. SEEKS JUSTICE.

Will Seek Restoration of Old Rate on Cement Shipped in Paper Bags,

The National Builders' Supply Association has taken up with the Classification Committee the question of restoring the fourth class rate on cement in paper bags for local shipment.

This rate was discontinued at the instigation of the Committee on Uniform Classification, they contending that paper bags were not a proper container for cement when subjected to the necessary handling of a local shipment, but several of our members have claimed that they cannot recall ever having made a claim for breakage in local shipments although they have been making shipment in this manner for a number of years.

The following letter has been sent out to members:

"About March 1st, the Official Classification Committee of the railroads issued an order refusing to accept cement, natural or Portland, in L. C. L. lots packed in paper bags.

"In certain sections of the country this order has worked a hardship as small buyers have insisted upon shipment in paper bags, and when this was not done it caused unnecessary friction. They object to paying thirty cents more per barrel on account of packing in cloth bags, as they have no use for the bags as a rule, and quite frequently the return freight and drayage to the station makes their return prohibitive.

"The (railroads) Committee on Uniform Classification recommended the elimination of this rate because they did not consider paper bags a proper container for cement when the material is subjected to the necessary handling of a local shipment. However, several of our members advise that they have been making local shipments of cement in paper bags for years and cannot recall a single instance when it was necessary to make a claim on account of damage.

"We have taken this matter up with the Official Classification Committee and they have docketed for consideration at their next regular meeting early in October a proposition to provide for shipment of natural or Portland cement in paper bags on the basis of fourth class, L. C. L.

"Inasmuch as the demand for this rate comes almost entirely from the Middle West, we have addressed this letter to every active member of our Association west of the Alleghanies. If this rate is to be restored we will have to co-operate in bringing the utmost possible pressure to bear on the committee in order to demonstrate that there exists a real demand for its restoration.

"Therefore, we want you to write to Mr. R. N. Collyer, Chairman of the Official Classification Committee, 143 Liberty street, New York City, requesting that this class of shipments be provided for and giving your experience in regard to claims for damage against the railroads.

"Do not forget to send a copy of your letter to this office, as we wish to have all the information possible before us when summing up our final argument for presentation to the Committee.

"This matter is urgent, as the time is growing short, and if we are to accomplish anything this year you must act immediately."

F. L. Woods, former superintendent of the Iola Portland Cement Company, is taking his vacation, visiting the different western cement mills. He recently spent a day at Colton with the California Portland Cement Company.

AMERICAN ROAD CONGRESS

Concrete Declared By the Director As the Most Desirable Material to Use in Building Automobile Speedways

Logan Waller Page, Director United States Office of Public Roads, has given the following exclusive interview to the editor of ROCK PRODUCTS, appreciating the fact that this publication has taken the lead along the lines advocated by him. The editors of other publications are privileged to use it entire or in part, provided there is no alteration of Mr. Page's language.

E. H. DEFEBAUGH, Publisher.

Manufacturers of all sorts of materials used in the construction of highways will find a great educational value in the exhibits which are to be made at the sessions of the American Road Congress, to be held in Atlantic City September 30-October 5. Traffic conditions in the United States have undergone such changes within the last decade, owing to the advent of the automobile and motor truck that even the most experienced manufacturer of road materials will be able to obtain some hints of value at the Congress.

Logan Waller Page, Director of the United States Office of Public Roads, who is also the president of the American Road Congress, will make an address discussing in detail the experiments which he has recently made to determine the cause for the destruction of roads by automobiles. There will be an authoritative discussion of the needs of the various roads of the country in Mr. Page's address.

In an exclusive interview with the editor of Rock Products, Mr. Page, outlining modern traffic conditions, said:

"Under horse-drawn traffic, a well-constructed macadam road wears out in two ways: (1) by actual wear of the road material due to impact and abrasion of iron shoes and iron tired wheels, and (2) by disintegration of the road surface apart from the wear of the road material. The first form of wear actually reduces the second by constantly forming new binding material to replace that which is removed. Where a suitable road stone is employed, this replacement keeps abreast with the removal of the products of wear and the road wears out slowly and uniformly. The cost of maintenance is, therefore, kept within economical limits. On macadam roads and in fact on any type of road, the rubber-tired automobile causes but little wear of the material of which the road is constructed. Unless, however, the individual fragments or units of which the road is composed are firmly held in place, the powerful shearing action of the driving wheels displaces these fragments and so causes rapid disintegration of the road surface. This action increases with the speed and weight of the vehicle, and is most pronounced on curves owing to skidding of the machine at such places. The use of chains and other anti-skidding devices increases somewhat the wear of the road material.

"A series of experiments conducted by the Office of Public Roads has given some most interesting and conclusive results: A sixty-horse power car, stripped for racing and weighing with the driver and mechanician about 2,800 pounds, was driven over a stretch of level, broken stone road, first at five miles an hour, with increasing rates of five miles an hour until a speed of sixty miles was attained. The road was a section of government road which had been resurfaced two years well adapted to withstand the shearing action of machines driven at high speed for the individual parts are held rigidly in place by a powerful chemical set in the case of bricks of blocks. If such roads are well constructed and properly banked at curves, they should be practically unaffected by automobile traffic, and if well crowned and drained should last indefinitely, providing due precautions are taken to prevent expansion or contraction cracks, by placing expansion joints where needed. Macadam or gravel roads surfaced with a good grade of bituminous binder may give temporary satisfaction for this class of traffic, but it is doubtful if either the bituminous surfaced or bituminous constructed road will eventually prove as economical, owing to the necessity for more frequent treatment or repairs. In this connection it will be of interest to compare the cost of the brick-paved track at Indianapolis with other large automobile race courses during a period of five or ten years.

"The very factors that make cement concrete, brick and block desirable materials for the construction of strictly automobile roads cause them to be far from ideal materials for the construction of roads subjected to mixed traffic. Brick and cement concrete being non-resilient, are hard upon horses and make noisy roads under the impact of iron-shod hoofs. Such roads are, therefore, undesirable for parkways and pleasure drives. Beside this, all types of brick and block pavements at the present time are far too expensive for the average park and pleasure drive. Surface treated macadam and gravel roads are, as a rule, well adapted for the class of traffic here encountered, providing a suitable binder is intelligently applied. The roads are, as a rule, under constant supervision, so that it is possible to make a number of applications of the binder during a season, if necessary, without exceeding economical limits. The materials used in such treatment may be hygroscopic salts, oil emulsions or more or less fluid bituminous binders, according to specific local conditions which will have to be met.

"As a general rule, it can be said that for automobile race tracks and speedways a hard non-resilient type of roadway, such as cement concrete and brick is most desirable, while for parks previous to the test and was in good condition. Photographers were stationed at a point on the road designated for the proper speeds and photographs were taken of the effect produced during the passage of the car. It was evident from a consideration of these photographs that up to fifteen miles an hour little or no effect was produced on the road, and even at twenty miles an hour the observer concluded that no serious damage was done. From twenty miles an hour on, however, the effect was decidedly noticeable with each increase of speed, and the dust is often lifted from the road by a severe shearing stress of the driving wheels, which has been compared to the action of a circular saw going through a board. Once lifted from the road, this fine material is subjected to the effect of air currents generated by the car body and subsequently by the wind. Thus, large quantities of the very material that is essential for bonding the road together are rapidly carried away, the wearing stones are soon left bare and loose, and subject to displacement, water finds its way into the body of the road and a general deterioration rapidly sets in. It is, therefore, evident that the most serious damage to our roads as a result of increased motor traffic is due to the shearing stress of the rear wheels on the road surface when the machine exceeds a speed of twenty miles an hour.

"In the construction of automobile roads there may be one of three conditions to meet:

(1) The road may be subjected to automobile traffic only, in which case excessive speed is often encountered. Speedways and race tracks are examples of such roads.

(2) The road may be subjected to moderate automobile traffic and light horse-drawn traffic as in the case of parkways and pleasure drives.

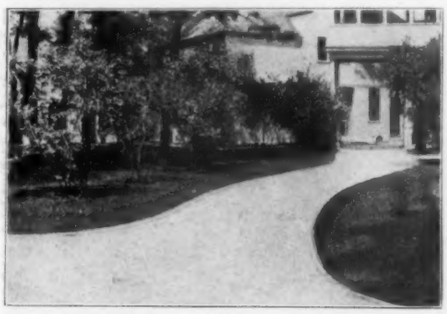
(3) The road may be subjected to mixed traffic including automobiles and heavy horse-drawn or teaming traffic, as in the case of many of our country and suburban highways.

"While each of these conditions can be successfully met by different forms of construction, there are certain fundamental principles which should never be lost sight of in attempting to meet them. For instance, in roads subjected to horse-drawn traffic a certain degree of resiliency is highly desirable, while in those subjected to automobile traffic only, resiliency is a minor consideration, owing to the cushioning effect of the rubber tires. Therefore, an automobile speedway or race track may be well constructed of some rigid material, such as Portland cement, concrete or brick. Roads constructed of such material are particularly and pleasure drives surface treated macadam and gravel roads will prove satisfactory, while finally for heavily traveled country and suburban highways, the bituminous constructed macadam gives most promise of economical and satisfactory results.

"While results from surface treatment can be regarded merely as temporary, lasting, perhaps, in the case of proper oils or tars, throughout a season, more permanent results have been secured through the application of some of the heavier bitumens during construction. These may be applied either by heating and mixing with the upper course of stone before spreading, known as the mixing method, or, by pouring the hot bitumen into the upper course of stone after it has been shaped, known as the penetration or groating method. The former is the better way, in that a more uniform distribution of the binder is secured, but the method involves considerable expense, as well as time, especially where a proper plant is not available and the mixing has to be done by hand.

"By working along these lines, we have certainly bettered conditions and produced a highway better fitted to resist the ravages of modern traffic, but there is much work ahead of us before we can say that we have wholly solved our problem. Automobile production is increasing with rapid strides, the distribution of cars is becoming daily more general and whereas almost the entire output of cars has until now been largely for passenger transportation, I believe the next ten years will witness a great development in freight transportation. The value and economy of motor transportation of freight in cities has been demonstrated, and the economy of building roads over which it can travel in the country will become more and more evident to the taxpayers in the rural districts.

"While there is a tendency on the part of many to arraign severely the automobile for its destructive action on our public highways, they should not lose sight of the other phase of the subject which is worthy of even more serious thought. The application of mechanical arts to our daily convenience and comfort necessarily introduces new problems which require long and patient experimenting for their solution, but when solved, are apt to produce a betterment of conditions that might otherwise not have been reached.



PRIVATE CONCRETE DRIVEWAY—HOME OF W. L. HARRIS, MINNEAPOLIS.

SPREADING BITUMEN ON THE CONCRETE, CENTRAL PARK, NEW YORK CITY.

CONCRETE PAVEMENT WITH "DOLARWAY" SURFACE, CENTRAL PARK, NEW YORK CITY.

"There can be no question as to the great commercial importance of the motor vehicle, because even though the pleasure automobile and truck may tend to destroy roads intended merely for horse-drawn traffic, they have had an improving influence not only in the building of many miles of highways, but in rendering most urgently the study of road improvement and preservation. The dust nuisance antedated the automobile by many years; if the experimental work leads to success, it will demonstrate the really beneficial effect to ourselves and posterity that motor traffic has had upon the art of road building."

MR. PAGE REPLIES TO PARKER.

Washington, D. C., Sept. 13.—To the Editor.—The September number of "Good Roads" contains a letter from Mr. Harold Parker, vice-president of the Hassam Paving Company, and an editorial concerning the American Road Congress which meets at Atlantic City, September 30 to October 5, based upon a misapprehension or a misconstruction as to the facts in the case.

The statement in Mr. Parker's letter, that the American Automobile Association and the National Association of Road Machinery and Material Manufacturers are organizations affiliated with the American Association for Highway Improvement, is entirely incorrect, as these two organizations are absolutely independent, and are participating in the American Road Congress on terms of equality with the American Association for Highway Improvement. It is true, however, that between thirty and forty state and inter-state organizations are identified with the Congress in an associate capacity.

Mr. Parker's letter would lead one to believe I gave him the impression that the American Association for Highway Improvement would confine itself strictly to propaganda for road improvement. At the congress held by the American Association for Highway Improvement in Richmond, Va., in November, 1911, a distinct section was devoted to the problems on road construction and maintenance, and over this section Mr. Harold Parker himself presided.

At the Richmond congress I, personally, urged upon the representatives of the American Automobile Association, the National Association of Road Machinery and Material Manufacturers, and the American Road Builders' Association present, that all of the organizations, including the American Association for Highway Improvement, join in the holding of a great National Road Congress in 1912. The representatives of these four organizations reported favorably to their respective boards of directors, and a duly authorized joint committee prepared a program on which two days of the American Road Congress were set aside for the discussion of questions of construction and maintenance. This program will be carried out as originally planned.

Mr. Parker's contention, supported by the editor of "Good Roads," that the field of construction and maintenance is the exclusive property of the American Road Builders' Association, does not represent the views of a large proportion of the membership of that organization, many of whom are also members of the American Association for Highway Improvement, and are participating in the program at Atlantic City.

That Mr Parker and the editor of "Good Roads" stand almost alone in their criticism of the construction and maintenance feature of the American Road Congress, is indicated by the fact that among the ones representing that section are twenty-four state highway commissioners, state highway engineers, or officials occupying similar positions, and on the program of that section appear the foremost authorities on road, street and bridge work in the United States. Eight of those who will take part in the program are directors of the American Road Builders' Association. It seems an undue assumption of authority on the part of Mr. Parker and the editor of "Good Roads" to criticize a policy and a program so largely endorsed by their own associates. Never before have such elaborate preparations been made for a road congress in the United States, and it will undoubtedly be the largest and most successful ever held in this country.

L. W. PAGE,
President, American Road Congress.

PROGRAM.

Monday, September 30.

The sessions of the Congress during the first two days will be under the direction of the American Automobile Association, which particularly devotes itself to the needs of road users. The addresses and discussions will accentuate the work which the A. A. A. is carrying on throughout the country through its 44 State bodies and 420 local clubs.

FORENOON.

10 o'clock—The governor of New Jersey will give the address of welcome, after President Robert P. Hooper, of the American Automobile Association, has been introduced by the President of the Congress. Since the laws governing automobiles relate to the constantly growing class of persistent road users, the subject allotted to Prof. Charles Thaddeus Terry, of Columbia University, chairman of the A. A. A. legislative board, will prove particularly interesting and enlightening. Inasmuch as the farmer is the all-year-around road user, one or more spokesmen of national reputation will give talks from the standpoint of the man in the country. President W. E. Metzger, of the National Association of Automobile Manufacturers, will give some astonishing facts and figures concerning an industry which has attained prodigious proportions.

AFTERNOON.

2 o'clock—Chairman George C. Diehl, of the A. A. A. National Good Roads Board, presiding.

Road marking, owing to the great increase in travel, now demands a systematic plan, and this will be explained by President Powell Evans, of the Automobile Club of Philadelphia, one of the largest A. A. A. organizations in the country. The difference between individual effort and organized effort in securing roads will be made clear by H. L. Vail, of the Cleveland Automobile Club, and other well-known club officers will speak upon the same subject. Since the A. A. A. has concerned itself greatly in the matter of a highway memorial to Abraham Lincoln, an address advocating this manner of recognizing the fame of some of the country's great men will be given by a prominent member of Congress.

BUSINESS SECTION OF WASHINGTON STREET, ELDORA, IOWA.

Tuesday, October 1.

FORENOON.

10 o'clock—Automobilists generally have expressed perfect willingness to pay a substantial registration fee, providing the money thus obtained is used exclusively in road maintenance. From Maine comes a proposition whereby these automobile registration fees are utilized in the creation of a bond system, and this will be explained by Secretary-Treasurer J. C. Scates, of the A. A. A. body of the Pine Tree State. Congress having under discussion various plans of federal aid, there will be a part of the morning session devoted to this subject. There is a vast amount of sentiment connected with the old national trails, and Judge Lowe, head of the National Old Trails Road Association, has been invited to tell what is being done towards modernizing these former avenues of travel.

AFTERNOON.

2 o'clock—"How to Eucourage the 'See America First' Idea" will be the keynote of the afternoon session, with such speakers included as Dr. Jos. Hyde Pratt, sponsor for the "Crest of the Blue Ridge Highway"; S. S. Ballard, secretary of the Automobile Club of Vermont; Dell M. Potter, of the Ocean-to-Ocean Highway Association, and Preston Velvin, president of the Virginia Automobile Association. New Jersey was one of the last states to open her gates to the automobilists of the country, and Senator Walter E. Edge, who figured prominently in the matter, will tell how this was brought about. G. Grosvenor Dawe, chief of the editorial division of the National Chamber of Commerce, will explain why business organizations should serve as good roads accelerators, as they do frequently in backing up their home automobile clubs.

At all sessions a period will be given for general discussion, which usually proves to be productive of much information not otherwise obtainable.

The third, fourth, fifth and sixth days of the congress will be under the direction of the American Association for Highway Improvement.

Wednesday, October 2.

FORENOON.

10 o'clock—The president of the United States will address the congress, which will be called to order by Logan Waller Page, president of the congress. Among other distinguished speakers at the morning session will be Mr. W. A. McLean, provincial engineer, of Ontario, Canada, who will explain the Canadian road systems; M. de Pulligny, chief of the French Mission of Engineers in the United States, who will describe the road system of France; Gen. P. V. De Graw, fourth assistant postmaster general, who will present the subject of road improvement from the rural mail delivery and parcels post standpoint, and W. W. Finley, president of the Southern Railway Company, who will present the road situation from the standpoint of the railroad.

Legislative Section.

AFTERNOON.

2 o'clock—Chairman (to be selected by the American Bar Association).

This section will be participated in by members of the American Bar Association, the State Bar Associations, the state legislatures and of the Congress of the United States, in addition to the other delegates and members of the American Road Congress. Reforms in road legislation will be discussed, as well as a model state aid bill, and it is expected that the legislation recommended by this section will be urged in each state by the various bar associations and other influential organizations.

(Program to be announced.)

Thursday, October 3.

Finance Section.

FORENOON.

10 o'clock—Chairman, Hon. Lee McClung, treasurer of the United States.

This section will be participated in by State Bankers' Associations in addition to other delegates, and will deal with bond issues, taxation, systems of accounting and all financial problems involved in the collection, safeguarding and expenditure of the $150,000,000 annually expended on the roads of the United States. Among the speakers will be Hon. Lee McClung, who will present a paper on bond issues; James R. Marker, State Highway Commissioner of Ohio, whose paper will deal with the question as to what extent the state should finance road improvement. Henry G. Shirley, chief engineer, State Roads Commission of Maryland, will give a paper on road accounting. Other papers will be announced later.

Administrative Section.

AFTERNOON.

2 o'clock—Chairman, Hon. Wm. C. Sproul, of Pennsylvania.

This section will deal with important administrative problems, such as the merit system in appointing road officials and assistants, skilled supervision of road work, centralization of control, etc. Among the important papers will be one on the merit system by Gen. John C. Black, president of the United States Civil Service Commission; "Trunk Line Highways," by C. Gordon Reel, state superintendent of highways of New York; "The Evolution of Highway Departments," by James H. MacDonald, state highway commissioner of Connecticut; "State Purchasing Department," by P. St. J. Wilson, state highway commissioner of Virginia.

Economic Section.

Chairman, Dr. Jos. Hyde Pratt, state geologist, North Carolina.

This section will deal with such important economic problems as convict labor and the benefits and cost of road improvement. Dr. Pratt will give a paper on "Convict Labor in Road Building," and Prof. E. Stagg Whitin, general secretary of the national committee on prison labor, will present the attitude of his organization on this question. Mr. Jesse Taylor, secretary Ohio Good Roads Federation, will address the congress on the economics of road improvement. Other papers will be announced later.

Friday and Saturday, October 4 and 5.

Construction and Maintenance Section.

Each paper will be followed by discussion.

Special Paper—"Road Construction under the U. S. War Department," by Col. Spencer Cosby, corps of engineers, U. S. A.

SUB-SECTION A—LOCATION AND GRADES.

Question 1—"Surveys," Prof. E. L. Griggs, University of Georgia. (One other to be announced.)

Question 2—"New Location and Relocation," Wm. J. Roberts, State Highway Commissioner, Washington.

Question 3—"Grades—Tractive Resistance of Various Surfaces—Relation to Traffic, etc.," Prof. E. B. McCormick, Kansas State Agricultural and Mechanical College.

SUB-SECTION B—FOUNDATION AND DRAINAGE.

Question 4—"Fundamental Consideration," Prof. Thos. H. McDonald, Iowa State College.

SUB-SECTION C—ROAD SURFACES.

Question 5—"Earth, Sand-Clay and Similar Materials—Qualities and Methods of Application," W. S. Keller, State Highway Engineer, Alabama.

SPREADING THE SAND, CENTRAL PARK, NEW YORK CITY.

Question 6—"Gravel and Stone—Qualities, Test and Selection," Albert Goldbeck, Testing Engineer, U. S. Office of Public Roads.
Question 7—"Bituminous Materials, including Tars, Asphalts and Oils—Qualities and Tests," Dr. A. S. Cushman, director, Institute of Industrial Research.
Question 8—"Construction of Gravel and Water Bound Macadam Surfaces," Austin B. Fletcher, State Highway Engineer, California.
Question 9—"Construction of Surfaces with Bituminous Materials," A. H. Blanchard, Professor Highway Engineering, Columbia University, New York.
Question 10—"Brick Roads—Material, Construction and Maintenance," Theo. A. Randall, Secretary National Brick Manufacturers' Association.
Question 11—"Concrete Roads—Materials, Construction and Maintenance," A. N. Johnson, State Highway Engineer of Illinois.
Question 12—"Experimental and Special Surfaces Applicable under Special Conditions," William H. Connell, Chief Bureau of Highways of Philadelphia, Pennsylvania.

SUB-SECT ON D—MANTENANCE

(Methods rather than Administrative System.)
Question 13—"Earth, Sand-Clay, Gravel Roads," Geo. W. Cooley, State Highway Engineer, Minnesota.
Question 14—"Water-Bound Macadam," James Owen, Consulting Engineer, Montclair, New Jersey.
Question 15—"Bituminous Surfaces," Charles W. Ross, Superintendent of Streets, Newton, Massachusetts.

SUB-SECTION E—BRIDGES.

Question 16—"Highway Bridges," Prof. William H. Burr, Columbia University, New York.
Question 16-A—"Highway Culverts," W. S. Gearhart, State Engineer, Kansas.

SUB-SECTION F—STREETS AND PARKS IN CITI AND TOWNS.

Question 17—"Street Paving," Geo. W. Tillson, Consulting Engineer, Borough of Brooklyn, New York.
Question 18—"Park Roads," Linn White, Engineer, South Park Commission, Chicago, Illinois.

SUB-SECTION G—ADOPTION OF SURFACES TO TRAFFIC REQUIREMENTS.

Question 19—Paper (to be announced).

SUB-SECTION H—ROAD SIDES.

Question 20—Paper, Glenn Brown, Secretary American Institute of Architects.

SUB-SECTION—I.

Question 21—"Road and Street Contracts (Essentials and Line of Improvement)," (to be announced).
Question 22—"The Relation of the Contractor to the Public Official," C. A. Crane, Secretary The General Contractors' Association.
Tours—The American Automobile Association will conduct a number of tours to the congress from cities and towns where clubs are located. Information may be obtained from the headquarters, 437 Fifth Ave., New York.
Evening Sessions—The evening sessions will be taken up principally by social functions, but it is expected that one evening will be devoted to "Old Trails and Historic Roads," under the auspices of the D. A. R., at which Mrs. Donald McLean will give an illustrated lecture, and a lecture on the Quebec-Miami International Highway, by H. D. Hadley, president.

BUILDING HIGHWAYS WITH CONCRETE TO WITHSTAND THE ELEMENTS.

Some one, I know not who, has said, "there are lies, damn lies, and statistics," but in spite of this statement, one of the best methods for engineers, county commissioners and contractors to form their judgment as to the future of concrete highways, is a study of the past achievements of this material—through statistics.

It has been my experience that a study of them in general gives a broader point of view of the subject in hand. Science is defined as an accumulation of knowledge. So in order to broaden our minds, we must come out of our own back yard, climb the fence and see what is going on in the yards of our neighbors. In many cases we would be better satisfied as to the conditions in our own yard.

A general study of this subject, which seeks to establish the largest number of uniformities among the objects treated by it, will enable us to better understand what we see in the other yards, and with this better understanding we are in a much better condition to cope with the future of concrete highways, be it favorable or otherwise.

It was the realization that poor roads were an economic burden, and that ordinary macadam, dirt, shell and bituminous macadam could not meet heavy traffic requirements, that showed the necessity for a road of permanent construction. The present trend of road affairs throughout the various states seems to be for a more progressive policy and a reform in administration.

The plan of requiring all road taxes to be paid in cash is much more efficient than the old system of paying road taxes by labor. I believe that ultimately the state will be the unit of administration, and will largely control and direct road work in counties and townships. It is a regrettable discovery that, despite the campaign which is and has been waged for better roads since the automobile first appeared, most of our states still display only a lukewarm interest in a matter of vital importance to them.

Present conditions of public roads all over the country are in a very deplorable condition.

Statistics show that out of a vast mileage of 2,300,000 miles of public roads in these United States only 8% per cent, or approximately 200,000 miles, were improved with a hard surface.

MAIN STREET, KENDALLVILLE, IND. DOLARWAY PAVEMENT.

In order to answer our present traffic requirements fairly well, at least 25 per cent to 35 per cent, or from 600,000 to 800,000 miles, should be improved with a hard wearing surface.

For instance, in an area as large as a county, about 25 per cent of the roads carry 75 per cent of the traffic, and the balance of the roads, or 75 per cent, act as feeders to the main trunk lines. Our problem now narrows down to not how many miles should be improved, but how to locate these roads, this 25 per cent or main trunk lines, so that a small mileage may be made to serve the needs of the greatest number of people.

It is at once apparent that traffic data should be collected in every county where road improvements are contemplated, in order that these improvements may be properly planned and located. I maintain that concrete roads, including those of concrete with a bitumen wearing surface, or a concrete foundation with a brick wearing surface, are the best and cheapest roads that can be built for main or trunk line highways. By "cheapest" I do not mean so much first cost of labor and materials, as the sum total cost of maintaining the road in proper repair for a term of years. It is only by expressing the cost in this way that we can judge fairly between the relative efficiency of different methods and materials.

Those roads which act as feeders to the main trunk lines, or the 75 per cent, which draw 25 per cent of the traffic, should be constructed from local materials to the fullest extent possible.

A great many macadam roads of trunk line capacity, subject to heavy automobile traffic, will cost from $300 to $600 per mile to maintain in proper repair. In Alabama and Tennessee an excellent chert gravel is found and produces a road not inferior to the ordinary macadam. The glacial gravels of Indiana make a satisfactory road for moderate traffic and offer an excellent material for the aggregate in concrete roads.

A bituminous macadam road will wear longer than a road the surface of which has been treated with a bituminous application of oil, but a bituminous macadam will last only as long as the binder. If the binder bleeds, coming to the surface to be tracked away, or evaporated by the sun; if the binder becomes hard and brittle the road will be left without anything to hold the stone together, and will quickly ravel out and be in a worse condition than before. For the same money or even less a binder can be had, which, instead of losing its binding properties within a few years, gains added strength and tenacity as the years go by, and that binder can be found everywhere cement.

OAKLEY COURT, GRAND RAPIDS, MICH.

Manufacture is becoming a more and more important consideration, and it is evident that however low the first cost of a roadway may be, it is going to be a very expensive undertaking in the end if it requires constant repair and attention.

The employment of cement in ancient civilization was largely in connection with highway construction. Concrete is the recognized foundation for asphalt, brick and similar pavements.

The Commissioners of Wayne County, Michigan, at first tried out bituminous macadam roads with results which were not satisfactory for automobile traffic. Then they decided to thoroughly try out concrete. One road was built and since then the system of concrete road construction has been extended to a considerable extent. The average cost of macadam roads after deducting the State Reward of the Marquette County, Michigan Road Commission for the last six years was 8.111^{67}/_{100}$ per mile and the equipment purchased during that time amounted to $23.751 and at the present time they are wearing very badly.

In Jackson, Mich., a six inch concrete with a bituminous wearing surface was laid for $1.17 per yard, including assessing, grading, excavating, curbing, etc., while brick will average from $1.75 to $2.25 per square yard, and not include curbing or extras.

Asphalt will cost from $2.20 per square yard and up.

Some of the principal objections to a concrete roadway are:

1. Surface too hard and glossy to give horses a proper foot hold. In this case there has evidently been two course work, with the wearing surface troweled. A broom or scratch surface would remedy this.

2. To rigid and therefore hard on horses feet. To remedy this I would suggest a bituminous wearing surface. This can be replaced very inexpensively wherever the condition of the road calls for it.

3. Reflection of heat and unpleasant glare. This objection can be overcome very easily by the addition of lamp black to the wearing surface.

4. That the expansion joints chip at the angles and under constant traffic deepen into V-shaped holes. This can easily be remedied by a protecting plate at the edge of the expansion joint, and the space between the two plates filled with a suitable elastic material.

One feature of a concrete pavement that is particularly attractive is the absence of any excessive maintenance charge. In reports from Portland, Me., on seventeen sections of concrete pavement, the oldest of which is six years old, the city engineer

reports there has been no maintenance whatever on any of these sections.

A plain macadam road, properly maintained, will require an absolute maintenance charge of approximately $450 per mile per annum.

A bituminous macadam, kept in first-class repair, approximately from $800 to $1,000 per mile per annum. These figures are based on a 15 foot roadway.

Concrete is the only building material versatile enough to allow itself to be adapted to the particular needs of each community. It is undoubtedly the material that will withstand the stress and strain of present traffic—and heavier traffic to come from the increased use of the motor car. Concrete roads are no longer in the experimental stage, but have been proven to have earned their cost and will continue as dividend payers for many years to come.

Any community that wants to greatly increase the value of its adjoining property, that wants a cheap maintenance road, a road sanitary and dustless, one that is not slippery and one that affords a clean trip to man, vehicle or horse 365 days in the year, should investigate the merits of concrete.

The experimental stage of concrete roadway construction has passed and from our knowledge of Portland cement concrete we can design a road surface to meet any traffic condition. When a roadway is to be improved it is to the communities' present and future interest to construct a permanent highway of concrete.

SHERIDAN ROAD IMPROVEMENTS.

The temporary repairs to Sheridan road, in Illinois, which were undertaken by the Sheridan Road Improvement association, have just been completed at a cost of approximately $16,000, according to the statement of President Edwin L. Lobdell. The repair work was done from the south end of Highland Park to the south end of Glencoe, distant about eight miles. These temporary improvements will last two or three years.

The repair work has been done under the direction of Arthur S. Lewis, superintendent of the Lincoln park board. On June 17 the work began. The pay-roll of the force was of course at once transferred from the Lincoln Park commission to the Sheridan Road Improvement association. Asphalt macadam was utilized in the repair work. The original stone macadam had disappeared in a number of places. The first work was to remove the immense deposits of clay which had bubbled up in wet weather through the worn out stone surface, and which formed mud holes and ridges in many places along the road.

The topography of the country through which Sheridan road runs is such that the best possible drainage can be obtained. Thus the problem of maintenance is not difficult. The Lincoln Park board is prepared to do this work at a very slight cost.

The next important step to take in the improvement of Sheridan road is the turning over of that part of the road which is now controlled by the Rogers Park board, to the Lincoln Park commissioners.

The transformation of Sheridan road from the condition of a rural road to that of a magnificent driveway, was the motive for which the association was formed.

"The late Daniel H. Burnham," says President Lobdell, "was keenly interested in the project, as a continuation of the Chicago plan. Sheridan road, when a part of Lincoln Park will become one of the longest boulevards in the world. Thousands of people use the road and it is to their interest to bring about its improvement. Until the temporary repairs were made, it was practically impossible to drive to Ravinia Park, despite the fact that the country traversed is the most picturesque, perhaps, of all that in the environs of Chicago, skirting the lake for the thirty-three miles from Chicago to the Naval Training station.

"Splendid as are the possibilities of such a highway, they have been completely squandered in the divisions of authority under which the road has been maintained. Every village board has had a separate and a distinct method of maintenance, which was largely no maintenance at all.

R. L. Carter, a public-spirited citizen of Elmwood, is laying concrete paving on 700 feet of road way near his home.

The 1,000 feet of concrete roadway at Mattoon has been completed under the supervision of Public Engineer Claude James.

Frick's Hill, in South Moline township, near Moline, one of the most important and at the same time one of the most troublesome arteries of travel, will be paved with concrete under the supervision of Engineer A. N. Johnson of the Illinois State Highway Commission.

THIRD INTERNATIONAL

Convention of the Pacific Highway Association —Sessions Marked by Interesting Address and Entertainment Features Enjoyed By All.

San Francisco, Sept. 5.—The third international convention of the Pacific Highway Association was brought to order on the morning of August 5, in the red room of the St. Francis hotel in this city, by President J. T. Ronald, with the words "We have come here to start something."

Following the invocation, the address of welcome was given by Lieut. Governor A. J. Wallace, Governor Johnson being East to familiarize himself with the most modern "steam roller" management. Mr. Wallace dwelt upon the benefit of highway improvements in bringing about a closer intimacy between the various communities of the Coast.

He was followed by Supervisor Byron Mauzy, who gave the welcoming address on behalf of the Mayor, to which President Ronald responded.

The address of John Brisben Walker, of the Panama-Pacific Exposition Company, was followed by the appointment of a resolutions committee, consisting of Samuel Hill, of Maryhill, Wash.; A. E. Todd, of Victoria, and F. W. Jackson, of San Diego; and a credentials committee, A. Warren Gould, of Seattle; A. G. Briggs, of San Francisco, and J. J. Donovan, of Bellingham, Wash.

At the close of the morning session the delegates attended a luncheon tendered by the San Francisco Chamber of Commerce, during which they were assured of hearty support for the highway movement by Vice-President Wm. T. Sesnon, of the Chamber of Commerce. Several other brief talks were given during the luncheon.

The afternoon session was devoted largely to business, the most interesting feature being an address by A. B. Fletcher, engineer of the California State Highway Commission.

Following the reports of committees, the delegates were guests of the Panama-Pacific Exposition Company in a trip on the army transport Slocum, inspecting the exposition site and presidio from the water side.

The evening was given over to illustrated lectures by T. J. Beaudet and P. E. Sands, who recently completed exploration tours through British Columbia and Mexico on behalf of the Hearst newspapers. Beaudet's machine was the first that ever followed that route from Los Angeles to Mexico City, a distance of over 3,000 miles, and the official account of the trip was presented to the officials of the Pacific Highway Association, to be used in promoting the construction of that portion of the Pacific highway. The "First to Mexico" gold medal was presented by the president of the association.
ning well up into three figures. Other contracts business during the coming winter.

Second Day's Session.

The second morning session opened with the address of Sir Thomas Taylor, Minister of Public Works of British Columbia, on the roads of British Columbia.

President Russell of the Vancouver, B. C., Automobile Club presented a strong invitation to the Association to meet in that city next year, and the invitation was unanimously accepted, the date of the convention to be named later by the executive committee.

The delegates assembled at the Cliff House at noon, to attend a banquet given by the California Automobile Association. During the afternoon addresses were given by Frank L. Brown of the Exposition company, and Robert Newton Lynch, manager of the California Development Board. At this time, also, a number of resolutions were adopted, one of which pledged a number of signers to advance a sum of $6,000 for the work of the Association during the coming year, to be repaid eventually out of the funds of the Association. It was also decided to create the position of executive officer, which will probably be given to H. L. Bowlby, former highway commissioner of Washington, who has recently been working on a permanent road campaign in behalf of the cement companies. The services of this officer will be at the disposal of any county or section needing expert advice.

A membership fee of $5 annually for regular members was levied, no fee being assessed on honorary members. A resolution was also adopted requesting the legislatures of Oregon and Washington to make adequate appropriations for the construction of the Pacific highway through those states, and a request was made to the Federal officials that all national parks be opened to automobiles.

A resolution was passed inviting Mexico to join the Pacific Highway movement and to construct an extension of the highway south to Mexico City. The Federal Government was asked, to extend financial aid for the construction of bridges across the Columbia river near Portland, and across the Colorado river near Yuma, Ariz.

Resolutions of thanks were passed to the officers of the state and city, the San Francisco Commercial Club, the Exposition company and others whose coöperation helped to make the convention a success.

The evening session of this day brought out the largest attendance of the entire convention, the feature being an interesting address by Samuel Hill, of Maryhill, Wash., followed by stereopticon views of highway work in Washington, and a moving picture exhibition of the use of paving brick by T. H. Collins, representing the Denny-Renton Clay & Coal Company, of Seattle.

Third Day's Session.

The third day opened with an address by J. A. Marsh, president of the Motor Car Dealers' Association of San Francisco, followed by the election of officers.

The new officers chosen were as follows: President, Judge J. T. Ronald, of Seattle; secretary, Frank M. Fretwell; vice-presidents: for Alaska, Falcon Joslyn, of Fairbanks; for British Columbia, A. E. Todd, of Victoria and F. R. McD. Russell of Vancouver; for Canadian Yukon, Alfred Thompson, of Dawson; for California, A. G. Briggs, of San Francisco, and F. W. Jackson, of San Diego; for Oregon, Frank B. Riley; for Washington, Samuel Hill.

The afternoon of the third day was to many the most interesting of the Convention. A large number motored down to San Mateo, and at San Bruno witnessed the moving of the first shovel of earth in the $18,000,000 good roads system of California. Ground was formally broken by Burton A. Towne, president of the California Highway Commission, who spoke briefly as follows: "It is the earnest hope of this commission to furnish California with a system of permanent roads second to none in the country. We want plenty of roads, and we want them without a bad spot anywhere. Let us take this occasion to assure you that the commission is trying its best to do the greatest good to the greatest number of people, and that politics is playing no part whatever in our work."

Some five hundred good road boosters enjoyed the well-barbecued beef, with Spanish sauce and frijoles, served by the San Mateo ladies, and short talks were given by President Ronald, of the Highway Association, W. J. Martin, of San Mateo, P. J. Walker, of the State Automobile Association, and Thomas Taylor, Minister of Public Works of British Columbia.

AMERICAN ROAD BUILDERS' ASSOCIATION.

Highway improvement, one of the most vital questions before the United States, will engage the attention of the foremost public officials and expert road builders in the country during the four days of the ninth annual convention of the American Road Builders' Association, at Music Hall, Cincinnati, Ohio, Dec. 3 to 6. Those in charge of the arrangements have been busy with the plans for the meeting, and the exhibition of road building materials and machinery to be held in conjunction with the convention for several months, and although there yet remains nearly three months before the first session will be opened, the number of official delegates already appointed and the amount of space taken by exhibitors make it beyond question that the convention will be not only the principal event of the year in road building circles, as it has been each year for nearly a decade, but will also surpass all previous meetings of the association.

ILLINOIS PLANS MEETING.

A convention of all citizens of Illinois who are interested in the improvement of the wagon roads of the state will be held at Peoria on Sept. 27, 1912, under the auspices of the Illinois Highway Improvement Association.

The convention will take on the nature of a conference at which advocates of good roads will determine upon a plan of action which, when carried out, will bring Illinois up from a low position in the list of states, considered from the standpoint of highway improvement, and give it a standing in keeping with its agricultural, business and social supremacy.

Concrete

National Association of Cement Users

Meets Annually.

OFFICERS

Richard L. Humphrey, Philadelphia ..... President
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Ira H. Woolson, New York, N. Y. ..... 4th Vice-President
E. E. Krauss, Philadelphia, Pa. ..... Secretary
H. C. Turner, New York ..... Treasurer
P. S. Hudson, Louisville, Ky.—Common Building Blocks and Cement Products.
H. S. Doyle, Chicago—Exhibition.
W. H. Ham, Boston, Mass.—Insurance.
A. E. Lindau, St Louis, Mo.—Reinforced Concrete Building By-Laws.
C. W. Boynton, Chicago—Roadway, Sidewalks and Floor
L. C. Wason, Boston,—Treatment of Concrete Surfaces.
R. P. Miller, New York—Fire-proofing.
Robert A. Cummings, Pittsburg, Pa.—Measuring Concrete.
Peter Gillespie, Toronto, Canada—Nomenclature.
Sanford E. Thompson, Newton Highlands Mass.—Specifications and Methods of Tests for Concrete Materials.
Logan Waller Page, Washington D. C.—Education.

CONCRETE SPHINXES AT CAPITOL.

St. Louis, Mo., Sept. 20.—A row of sphinxes, of reinforced concrete, will be placed on each side of the broad walk leading up to the Capitol of the American Woman's Republic at University City. Each of these sphinxes will be a memorial to the state that provides for its erection. The model was made by the famous sculptor, George Julian Zolnay.

WILL BUILD BIG RESERVOIR.

Lincoln, Neb., Sept. 20.—Abel & Roberts were the lowest bidders for the huge concrete reservoir at the A street pumping station. They bid $13,361, using cold twisted bars for reinforcement, and ask $8.50 per yard for extra concrete, aside from what is called for in the specifications.

GETS BIG GOVERNMENT CONTRACT.

Seattle, Wash., Sept. 20.—The Superior Portland Cement Company, of Seattle, has been awarded the contract to supply 200,000 barrels of cement for the Lake Washington canal locks. After making extensive tests of the samples, Major James B. Cavanaugh, corps of engineers, U. S. A., forwarded the sample to Washington and recommended that the war department accept the bid. The contract will be worth $378,000. The plant at Concrete recently doubled its capacity, and in making the recommendation for the award the engineer took into consideration the fact that the bidders would be able to deliver the cement as promptly as it was needed. Claude Wagner, formerly of Pontiac, Ill., who is chief chemist at the plant at Concrete, reports that in the last eight months every barrel of cement has been up to high standard.

BIG GRAND STAND PLANNED.

Plans for the $170,000 grand stand and wall for the athletic field at the University of Chicago have been completed.

They provide for a concrete stand of 10,000 capacity, bleachers to seat 5,000, and a concrete wall fourteen feet high. The improvement will be Gothic style, to correspond with the campus buildings.

CONCRETE IN SEATTLE.

Seattle, Wash., Sept. 20.—The Butler Construction Company is busy on the contract for the piers and abutments for the Great Northern steel bridge near Seattle. The contract calls for 10,000 yards of concrete.

H. C. Lilly & Co., of Seattle, are making plans for a six-story concrete mill and grain tanks.

A concrete building, to be used as a silk mill by the John H. Meyer Silk Manufacturing Company, is now in process of erection at Allentown, Pa. A. R. Hawk has the contract for the concrete work.

The Capital City Construction Company, of Des Moines, Iowa, was awarded the contract for 180 feet reinforced concrete bridge at Marshalltown, Iowa, for $7,439.

TENNESSEE BAPTIST MEMORIAL HOSPITAL, MEMPHIS, TENN.

E. Herlan, of Divernon, Ill., has entered the cement tile manufacturing field.

NEW BAPTIST HOSPITAL.

The Baptist Memorial Hospital of Memphis, Tenn., illustrated in this issue, is one of the handsomest buildings of the kind lately erected in the South. Construction work was extended over a long period. The plans were drawn by Architect John Gaisford, of Memphis, and the building cost more than $100,000. It is constructed in wings, exterior of light brick with much stone ornamentation, some terra cotta work, and abundance of concrete floors, steps and foundation work. It stands on a commanding site on the East End or Madison street car line.

NEW NORMAL SCHOOL BUILDING.

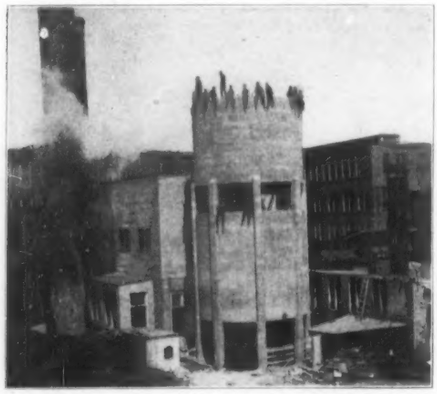
The group picture represents the West Tennessee Normal School buildings just occupied and finished this autumn, at Buntyn, suburb east of Memphis. Two years ago the State legislature appropriated for a normal school in each division of the State. The site is seven miles from Main street. The buildings are scattered over a tract of eighty acres. Architect B. C. Alsup, of Memphis, designed the buildings. The main building is of brick, stone and concrete, 380 feet long and 150 feet wide, three stories high. It is fireproof. The ladies' dormitory contains one hundred and ten bedrooms, has thirty-six elegant bathrooms, with tile floors and marble wainscoting. It contains three floors. The superintendent's home is a modern residence of two and one-half stories. There are a number of smaller buildings erected and to be erected. Concrete figures in the lower floor entrances, many of the hallways, porches and approaches. The total investment is upwards of $1,000,000 at the Memphis school. The school was opened Sept. 9 with Ex-Gov. M. R. Patterson, United States Commissioner Claxton and other gentlemen present.

The cement manufacturers of the Pennsylvania Manufacturers' Association want to put forth a new workmen's compensation act when the State Accidents' Commission meets in Pittsburg. The officials of these industries declare that the present form drafted some time ago by the commission appointed by Governor Tener is obnoxious and unfair to both the employer and employe.

WEST TENNESSEE NORMAL SCHOOL, MEMPHIS, TENN.

CONCRETE RESERVOIR.

Charles C. Stowell, senior member of the firm of C. C. Stowell & Son, Rockford, Ill., has built a novel reinforced concrete reservoir for the Burson Knitting Company, of that city. The upper tank has a capacity of 62,000 gallons and the



CONCRETE RESERVOIR AT ROCKFORD, ILL.

lower 85,000 gallons. The water passes through the softening process in leaving the tank and goes to the lower to be stored until used. The conical bottom of the lower tank is a feature of the design. The roof is also of concrete.

LOUISVILLE CONCRETE NEWS.

Louisville, Ky., Sept. 18.—The concrete business in this territory has been up to expectations during the past month. Considering the season of the year business was all that could be wished, and with the advent of September and cooler weather a general dissolution of the midsummer quietude is scheduled. Building activities are expected to be resumed in unusual force in the near future, vacationists having returned to the city and taken up trade where they left it with the debut of hot weather.

Some of the concrete men in Louisville are complaining of the low prices which are quoted in certain quarters on concrete work. Competition, it is said, is growing so keen that some of the contractors are willing to do work on a remarkably narrow margin of profit. Others feel that this method of securing contracts is an unworthy one and certain to injure the trade as a whole. However, there seems to be no plan of remedying present conditions as long as each concern works individually. Some of the concrete men are discussing the chances of success for an organization of construction men in Louisville, and the idea is meeting with general favor. No definite action has yet been taken along this line, however.

The Central Concrete Construction Company is now engaged on the reinforced concrete work on the handsome residence being erected by Louis Seelbach, a wealthy hotel man of the Kentucky metropolis. Mr. Seelbach has accumulated a good-sized fortune in the hotel business, and recently decided to build in the eastern section of Louisville. The Central company was awarded the contract for the work, which is to be unusually delicate and requiring great care. The same concern is taking care of the concrete construction on several bungalows in Crescent Hill. Officers of the company are much pleased with recent developments and are looking forward to a profitable fall.

G. W. Younger has begun work on the concreting of the Masonic Home, a new building which is going up in Louisville. The contract is a good-sized one and is one of several which the well-known concrete man is bidding.

Dennis Long, president of the Unit Brick & Tile Company, is expected to return from Europe shortly. Mr. Long has spent the past summer abroad, taking a long rest after a severe winter. He is in the best of health after his extended pleasure jaunt and is ready to take up the reins again. The Unit Brick & Tile Company has been especially busy during the past month with deliveries on contracts secured during the summer.

With silos coming into general use by dairymen and agriculturists of Kentucky, concrete is again in much evidence as the best material for the construction of the silos. The Kentucky Agricultural Experiment Station has been active in promoting the building of silos and it is certain that the coming year will see a big increase in that line in the state. The wooden type, while better than none, is losing ground steadily, being replaced by the more modern and satisfactory concrete silo. According to the report of the Kentucky Experiment Station, concrete silos are more economical than those made of other material, in the long run. "A 12 by 32-foot silo was built at Lebanon for a cash outlay of less than $150," states the report. "At Somerset, a concrete silo was built at a total cost of $400, the size being 16 by 40." From the above, it may easily be seen that the construction of silos is developing into a profitable source of business in Kentucky and one to which concrete men may well pay attention.

S. J. Craig, of Synthiana, Ky., has been awarded the contract for the concrete work on a loose-leaf tobacco warehouse to be erected by the Burley Tobacco Company in that town. The structure will be 140 by 260 feet and will cost about $30,000.

PITTSBURGH CONCRETE NEWS.

Pittsburgh, Pa., Sept. 18, 1912.—This is an age of concrete in Pittsburgh. Ask any architect or engineer what the chances are for a big concrete market here the next two years and he will tell you that almost every job that comes into his office is being figured with possible reference to concrete construction. In warehouse building there is nothing to it. Reinforced concrete is away in the lead. A half dozen big warehouses which have been built this summer are striking examples of this movement. By far the biggest thing for the concrete people that has ever been projected here is the sea wall to extend along the local rivers for flood protection and which will require several years in building. An appropriation of $1,000,000 will, it is expected, be made shortly, and this is likely to be only the beginning of enormous expenditures for flood protection. The raising of the North Side streets and the removal of the hump have added immensely to the demand for concrete in this city. Retaining walls, new foundations, etc., are being put in by the dozen so that concrete men are all to the good so far as present business and immediate prospects are concerned.

James E. Heydenreich, of Pennsylvania avenue, East Liverpool, Ohio, and Thomas Hindle, of First avenue, East Liverpool, have purchased in the suburbs of that down-river town a site 70 x 224 feet, and will start work at once on the construction of one of the most modern and thoroughly equipped concrete block manufacturing plants in the state. A second factory will be erected at Klondyke, near the Pennsylvania railroad. The new firm has secured from a New York company the exclusive right for the manufacture in that territory of concrete building blocks, pillars, slabs, etc., which will be absolutely hard and waterproof.

The Raymond Concrete Pile Co., of Pittsburgh, has the contract for 1,500 piles to be used in the trestle of the $5,000,000 plant which the Pittsburgh Steel Co. is now building at Nonessen, Pa. The same company was awarded the contract for the piles and reinforced footings for the new building for the Armstrong Cork Co., in Pittsburgh.

The Dravo Contracting Co., of this city, has completed the central pier for the big Point bridge at the union of the Allegheny and Ohio rivers. This central pier will be 70 feet above mean harbor stage. The company completed the north shore abutment April 22 and the south shore abutment June 5. It is now removing its false work and piles are being driven between the piers for the steel erection which will be done by the American Bridge Co. The bridge abutments and the pier are made of stone and concrete, the latter being formed into a shell casing.

Contracts for rebuilding the Seventh and Thirteenth street bridges over the Allegheny river were let to the Pittsburgh Construction Co. of this city. A large amount of concrete work will be included in the job.

The Nicola Building Co. has work well advanced on the concrete viaduct at Nonessen, Pa., near Schoonmaker avenue. The false work for the middle span is almost completed.

Extensive preparations are being made in this city for the first Pittsburgh Cement Show, which will be held in the Exposition Building, Duquesne Way, December 12 to 18. Cement men are all very enthusiastic over the prospects for the show. An unusually large amount of publicity and advertising will be put out from this city and with the enormous floor space afforded in the Exposition building this show is likely to be one of the most successful conventions of building and supply men ever held in this country. The Pittsburgh Industrial Development Commission is arranging for an extensive campaign of publicity in all the trade and a large number of the newspapers in this country in connection with the show.

NEW YORK CONCRETE NEWS.

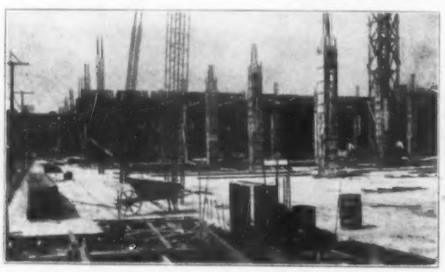
New York, N. Y., Sept. 18.—The Barrows-Stewart Co., 17 Battery place, New York City, has received the general contract for the superstructure of the following buildings for the Strathmore Paper Company at Woronoco, Mass., of reinforced concrete: Stockhouse, six stories, 146 x 82 feet; beater room, two stories, 140 x 55 feet; finishing room, two stories, 184 x 146 feet, and machine room, two stories, 200 x 72 feet. Architects and engineers are Samuel M. Green Company, Springfield, Mass.

John F. Stevens, 55 Wall street, New York City, has been awarded the general contract to erect a reinforced concrete and steel hydro-electric plant for the Ontario Power Company, of 60 Wall street, New York City. The plant will be situated on the Salmon river, near Pulaski, N. Y. It will be two stories high, 200 x 250 feet, with a dam 1,000 feet long of concrete. The cost is estimated $1,500,000. The engineer in charge is William B. Parsons, 60 Wall street, New York City.

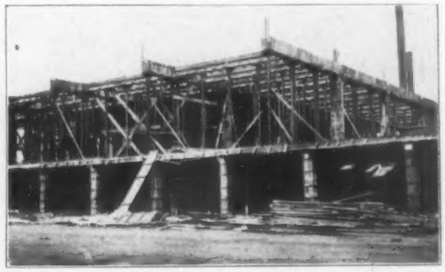
The Mercer Construction Company, of Perth Amboy, N. J., has started work on the two-story reinforced concrete and brick factory at this place for Roessler and Hasslacher Company, 100 William street, New York City.

BOX FACTORY OF CONCRETE.

The Kansas City Packing Box Company is building a reinforced concrete building for its occupancy. It is a three story structure 200 by 285 feet. The office will be on the 3rd floor at one corner of the building. U. S. steel sash are used. The smoke stack of concrete is 150 ft. high, 7 ft. in diameter at the top. The building will be equipped with automatic sprinkler system, and all machinery will be electrically driven. The structure will have two freight elevators, and one electric passenger elevator for office use. There will be locker rooms, lunch rooms and shower baths provided for the employes. The loading dock, running the entire length of the building, will be protected by a canopy. The docks in the rear will be covered with a steel trussed roof and Federal tiles.



SHOWING COLUMN FORMS.



SECOND FLOOR FORMS.

FIRST FLOOR FORMS.

MEMPHIS CONCRETE NEWS.

Memphis, Tenn., Sept. 18.—The market in Memphis shows up very well this month and big polities, while much talked, is not interfering with business in construction lines. It seems now definitely assured since the passage of a congressional bill of permission, that the Rock Island R. R. system will put its bridge across the Mississippi river, that being the second to span the river at this point. The I. C. station will be built soon and a good deal is now going on in town. Business is nothing to boast about, but it is fair.

W. W. Fischer, of the Fischer Lime and Cement Co., said the ROCK PRODUCTS' correspondent: "The demand for all building materials is picking up. There will be a great scarcity of cement this fall. We are doing our best to accumulate a stock but the mills are anywhere from two to four weeks behind. We will have a late fall here. Cement prices are stiffening up right along. The lime trade is about as usual. The plaster demand is unusually good." Mr. Fischer has just returned from a business trip to Chicago.

Your correspondent was at Tiptonville, Tenn., which is in the heart of the Reelfoot lake flood district of the spring. Crops are looking fine there though planted very late. The Tiptonville Mercantile and Lumber Co. handles cement, plaster and lime. C. E. Wygal is general manager. The firm figures on putting in a concrete tile machine.

They are building now a drug store and office building with concrete floors, reinforced block design for Marcum Bros. in Tiptonville. St. Genevieve lime is being used; Atlas and Portland cements. The blocks are made in a J. C. Miller, Jackson, Mich., adjustable machine No. 3.

The Cubbins Lime and Cement Co.'s place in North Memphis which was taken over recently by the Fischer Lime and Cement Co. is being operated as warehouse No. 3.

The Wilson Concrete Co., of Dyersburg, Tenn., has considerable paving work in hand and reports business generaly good.

The Hickman Concrete Co., conducted by Post Master Stephens, of Hickman, Ky., has had a fair year. A new railroad has been built into Hickman recently and the town is doing nicely. There are several concrete residences there.

J. E. Campbell, of Humbolt, has erected a large two story concrete block house at Masons Depot, Tenn. Mr. Campbell does quite an extensive contracting business in concrete.

The Jas. Alexander Construction Co. at Memphis is building a $50,000 warehouse at the corner of Overton avenue and Front streets. It will be two stories in height and about 100 feet square. Brick and reinforced concrete will be used.

Ike Samelson, of Memphis, will have erected a dance, lodge and office building on McLemore Ave. east of Rayburn boulevard. The contract for the building, the estimated cost of which, when entirely completed, is $27,500 and was let by Fred B. Young & Son to Architect Charles O. Pfeil. The building will be three stories of brick, cement and terra cotta.

The H. A. White Auto Co. at Memphis has built a new home of steel and concrete, one story, front of hand made terra cotta. Plans by Alsup and Smith.

Archts. Jones and Furbringer have drawn plans for the new Masonic building, which will be of Italian renaissance type, six stories high, the interior of terra cotta and brick, lower floor of granite.

CONCRETE IN ILLINOIS.

Springfield, Ill., Sept. 20.—The new Beggs & Lynn grain elevator to be erected in Springfield will be of reinforced concrete.

Foy & Townsend, commission men, at Sycamore, have erected a battery of five concrete silos, at the Great Western stock yards in that city. Four silos were erected in the form of a square and about two feet apart. A connecting cement wall was built between the four, thus making the fifth. The total storage capacity will be 1,250 tons. When not in use for ensilage they will be used for holding grain.

B. A. Feldman & Sons, of Lincoln, who started in business eighteen months ago, expect to keep increasing the size of the plant. They are now specializing in block porch piers and chimney blocks. The members of the firm are B. A. Feldman and sons August J. and Albert B.

John Blonquest, 55 years old, a concrete contractor of Tuscola, fell forty feet from a third story window at Decatur, August 28, and was crushed to death on the pavement below. It is supposed that he became too warm, seating himself in the window, went to sleep and lost his balance.

The famous hairpin turn on the Elgin automobile race course has been protected by a cement corner.

The Lenard Construction Company, of Chicago, was awarded the contract for a group of four reinforced concrete factory buildings at East Moline for Deere & Co.

L. V. Reecher, of Coleta, has been busy putting in cement bridges near that city. Genesee township expects to put in twenty-five cement bridges this year.

Hoffer & Co., of Chicago, was awarded the contract for building the concrete pier for the new county bridge in Decatur.

Five enterprising farmers near Blackberry Center, headed by Thomas Conway, organized a coöperative concrete company to build silos for themselves. Two carloads of cement, a mixing machine and tools and moulds were secured.

Concrete is being used in the new Chicago, Burlington & Quincy Railrod passenger station at Galesburg.

New concrete sign posts with the street name reading from top to bottom in letters sunk in the concrete have been placed on corners at Evanston.

Concrete for the Rock Spring Park bridge of concrete at Alton, was let to J. H. Maupin, Jr., of that city, for $3,004.

Tools worth $100 were recently stolen from Bert Harding, cement contractor, at Aurora.

The Illinois Valley Cement Products Company, of Farmington, believes in taking its own medicine and has erected a large cement block office.

H. J. Themer, a farmer near Crete, employed Christian Brothers, of Crete, to build a reinforced concrete 110-ton silo and model dairy barn. Both structures, which have been approved by dairymen in northern Illinois, were put up for $3,500.

J. R. Nettz, of Dixon, has taken the agency for the cement post machine which was invented by E. J. Condon, of that city. He also has orders for 20,000 posts from Lee county farmers.

Iven Hoit has the contract for a new cement block school house at Pitwood.

The Bruning Lumber Company, of Havana, has installed machinery at its cement products factory in order to double the output.

The Ideal Concrete Construction Company, of Joliet, has been awarded the contract for concrete bridges over Indian Creek in Kane county.

The county fair season in Illinois has seen a larger number of exhibits by concrete manufacturers than before. The Granitoid Stone Company, of Urbana, had a booth at the Champaign County Fair in which it showed a model watering trough, a water and feed trough for chickens and a portable feed lot for hogs. Other products shown were blocks for granary floors, fence, posts, building block of all sizes, surfaces and colors, silo blocks, chimney blocks and Cement Seal paint. A guessing contest was conducted in coöperation with the Universal Portland Cement Company. Joseph Patternoster & Sons, of Fairbury, had a display of building blocks and fence posts at the Fairbury Fair. At Belvidere S. S. Griffeth showed blocks for building silos and porches, and Dan Sullivan also had a big display.

H. B. Eshleman, the concrete tie man of Pulaski, has been reëlected secretary of the Illinois branch, National League of Postmasters.

CONCRETE IN MINNESOTA.

Minneapolis, Minn., Sept. 20.—Work of the Canby State High School, at Canby, Minn., in using concrete as it should be used on the farm was shown at the Minneapolis State Fair. E. S. Billings, agricultural director, believes that his school is the only one which makes a special study of mixing and using concrete.

Splady & Albee, of Minneapolis, was awarded the contract for a three-story brick and concrete business block, to be erected by Guy A. Thomas at Western and First avenues, N., Minneapolis. It will cost $55,000.

Circuits of farmers at Ashland, Spooner, Rhinelander and Mountain, Wis., are using concrete silo forms, rented to them by the College of Agriculture of the University of Wisconsin. Professor Ocock showed the farmers how to build a silo.

Pike & Cook are building a three-story reinforced concrete warehouse at Twelfth avenue and Third street, Minneapolis, for the Minnesota Linseed Oil Co.

CONCRETE IN IOWA.

Davenport, Ia., Sept. 20.—The Concrete Engineering Company, of Davenport, Ia., has been reorganized, with a capital stock of $10,000, to do a general contracting business in all kinds of cement work. The tri-cities, Davenport and Rock Island and Moline, Ill., will be its special field. Ralph C. G. Graham, a civil engineer who originally organized the company seven years ago, has been elected president. Vice-president Wade C. Stoops, a new member of the firm, was chief engineer in charge of the construction of the Muscatine North and South road. J. Reed Lane, who becomes secretary and treasurer of the company, is a member of the legal firm of Lane & Waterman. The plant will be maintained at Warren and Gaines streets, while the uptown offices will be in the McManus building.

The J. B. Frahm Fuel & Construction Company, of Davenport, has been reorganized as the Frahm Coal & Concrete Company. Bert Frahm, who has been secretary, becomes president and general manager, and his sister, Miss Paula Frahm, will be secretary and treasurer.

The Stewart-Simmons press is planning a new $30,000 reinforced concrete office and plant on Jefferson street, in Waterloo.

Cole Brothers, of Waterloo, have completed a sanitary reduction plant for converting the bodies of dead animals into by-products, by erecting a two-story concrete block plant.

The Monarch Manufacturing Company will locate a plant at Boone to make a cement tile machine. The Commercial Club of that city gives the site, builds the building, and moves the company. The officials of the company, which is incorporated for $45,000, are: President, W. R. Prewitt; vice-president, F. S. Partwell; secretary-treasurer, L. C. Sears.

SAN FRANCISCO CONCRETE NEWS.

San Francisco, Cal., Sept. 17.—Jerome Newman, local harbor engineer, has advised contractors for the construction of piers 26, 28, 30 and 32, that the specifications for the concrete mixture for cylinder piles will have to be changed. Instead of providing one part cement to nine of aggregate, the proportions will be one to six. It is estimated that the four new docks south of the Ferry building will be completed by June 1, 1913.

Plans have been completed for a $100,000 reinforced concrete power house for the Union Iron Works.

BOYS VISIT CEMENT PLANT.

Louisville, Ky.—To the Editor.—We have read with interest on Page 26 of Rock Products for August 22nd, under the caption, "Pupils May Promote Cement Use," of cement work that has been done by the pupils of various schools throughout the country.

We desire, however, to call your attention, to the last paragraph which reads, "Boy scout patrols and classes from school inspect all sorts of industries, but who ever heard of anybody who has to do with cement, inviting them to learn about one of the biggest industries in the country?"

We are pleased to advise that this company, believing that a knowledge of the manufacture of cement would be not only of interest but of considerable value to technical students, has for years made it a practice to invite the junior classes of the Louisville Male High School and the Manual Training High School of Louisville to visit its cement works along towards the close of the school year and study the various processes in the manufacture of Portland cement. This trip is now looked upon as one of the regular features in the curriculum of the two schools mentioned.

We have also had as our guests senior classes from the Rose Polytechnic Institute at Terre Haute, Ind., and Purdue University at Lafayette, Ind.

Louisville Cement Co.,
By HENRY S. GRAY,
Sec'y & Treas.

A HUNDRED THOUSAND BARRELS OF CEMENT.

The Standard Portland Cement Company has closed contract with the Alabama Interstate Power Co., at Montgomery, Ala., to furnish them with over 100,000 barrels of Standard Portland Cement to be used in the construction of this immense power plant at lock No. 12, on the Coosa river.

This is the third large project undertaken by the Standard company. At present this company is furnishing 150,000 barrels for the power plant now in course of construction near Columbus, Ga.

The Company also furnished over 60,000 barrels for the dam built at Edgewater by the Tennessee Coal and Iron Company.

The United States government is now using Standard for the same class of work on the Tombigbee river.

The demand on the company is greater now than ever before and the factory, which is located at Leeds, Ala., is taxed to its fullest capacity.

CEMENT

Association of American Portland Cement Manufacturers

Meets Semi-Annually.

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..... Executive Committee

CEMENT IN IOWA.

Des Moines, Ia., Sept. 20.—The Fort Dodge Portland Cement Company has reduced its capitalization from $3,500,000 to $2,000,000, because it was discovered that the corporation was overcapitalized. Governor B. F. Carroll, of Iowa, has been elected a director. The company has voted a bond issue of $150,000 and will proceed with the construction of a plant at Gilmore City. The McLaughlin Engineering Company, Kansas City, Mo., which has been awarded the contract for construction of equipment, expects to have it finished in about a year.

Farmers near Mason City, Ia., state that the Atlas Cement Company is closing options on a large acreage northeast of the city and surmise that the company will erect a plant there.

CEMENT IN ILLINOIS.

La Salle, Ill., Sept. 20.—The Marquette Cement Company, of La Salle, has donated to the Women's Bureau of the city four pieces of concrete furniture, to be used in the Gooding street park.

The Atlas Portland Cement Company, of Ilasco, Mo., is invading Illinois for men to operate its plant No. 5. They are also seeking workmen in Iowa. Three 8-hour shifts will be used. The company has a contract for supplying a large quantity of cement to the Mississippi River Power Company for construction in the big dam across the river at Keokuk. The Streckfuss steamer Dubuque probably will run late in the winter in order to handle its traffic, because just as soon as possible the river will be closed to navigation and work on the dry dock will be commenced.

A statement has been made by the Marquette Portland Cement Company, of La Salle, to the effect that the company has appropriated $180,000 for the purchase of additional machinery for the plant, anticipating a revival of demand for the coming year. A very large increase in demand is expected from agricultural districts in the Central West.

The governing board of the German-American Portland Cement Company, of La Salle, has notified President Fritz Worm that it approves the contract made with the city for the occupation of Fifth street road. A new bridge will be built for traffic and the company will be enabled to go ahead with improvements to its plant.

The Sandusky Portland Cement Company, of Dixon, has installed a new 110-ton steam shovel.

CEMENT PLANTS TO ELECTRIFY.

The cement industries in Lehigh and Northampton counties, Pennsylvania, will be the first consumers of power furnished by the Lehigh Coal & Navigation Company when its mammoth plant, now in process of construction at Hauto, is completed. All these mills are from 20 to 50 miles from the Hauto plant. Sub-stations will be established at once at Coplay and Pen Argyl for stepping down and distributing the current to users.

The Bowen-Wells Concrete Company is the style of a new concrete firm which has just entered the local field, with offices in the Vanderbilt building. B. W. Bowen, formerly of Atlanta, and John Wells, are the principal owners.

THE CEMENT SITUATION

On Sept. 9 the publisher of Rock Products wrote to the various producing cement manufacturers, asking the following questions:

"How is the price compared with six months ago and also one year ago?

"How is your stock on hand compared with the same period?

"What contracts on your books assure you of a certain sale for the next four months?

"What prospects have you in view that will guarantee a volume as great or greater than last year?

"What is your local experience about the car shortage at this time?"

The companies answered without reserve, and the situation, taken as a whole, as revealed by these letters, is most flattering. Following are the answers, one from each company being given under each head as indicated:

IN THE EAST.

Gives General Review.

Your favor of the 9th has our attention and, as you know, we always wish to be conservative in statements which we make and believe it is a better policy in the long run. There have been very large stocks in this country and the betterment in cement has, therefore, come about slowly, notwithstanding the very much improved general tone of business. It looks to us as if the enormous crops we are blessed with this year will be none too great and there should be an extremely heavy demand for these for export. Thus we doubt if there will be any surplus worth mentioning for this country and this condition of prosperity, barring some unforseen calamity, ought to continue and be more pronounced next year. We have for some time suggested to our largest customers that they try to anticipate the probable car shortage, but it is very difficult to get the trade in general to give due weight to such conditions. Only a comparatively small percentage will really give serious thought to their own protection in such matters and those most careless are the ones who makes the greatest outcry when they find themselves in difficulty. Of course many purchasers are not equipped to take in very large quantities, but the effort should be made broadcast to bring this to the attention of all buyers and get them at least to protect themselves to the maximum extent of their ability.

Owing to our location in New York State, giving us such advantages from a distributive point of view and as regards freight rates, we have been running practically 100 per cent right straight through the deplorable times in the cement industry, so that our stock about which you inquire is hardly a criterion of the general Eastern market. We have almost the same amount of cement in our bins that we did last year, but none too much to turn out a properly tested and thoroughly safe and high grade portland. We are, furthermore, gradually reducing this stock and will have it down to the lowest limit of safety, we believe, within the next month or so. As near as we can estimate the total stock in the various New York plants is a trifle less than at this time last year, notwithstanding the fact that considerably more cement was made in that State. The shipments are heavier than for the same period last year, by considerable. In the Lehigh Valley, owing to failures and forced shutdowns, etc., from the unfortunate condition of overproduction, the total stock now is less by a good deal than for the same period last year and the production also was smaller than up to the same period last year. This puts that great producing center in a very much better commercial position than they have enjoyed in some time and with the heavy shipments continuing, it would be quite reasonable to expect at least a 10c per barrel additional advance. Prices are now in the neighborhood of 15c per barrel higher than they were two or three months ago, although, unfortunately quite a good deal of cement was booked at those ruinous prices and must be shipped by the mills where it nets them in numerous cases actually less than the cost of production, for a thoroughly high grade portland. Unless additional and ridiculous promoting schemes are foisted on the market, which seems hardly likely after the bitter lesson and the many failures, the Eastern market should be very much improved for next season. It is to be hoped and it is probable that after these sad experiences and heavy losses, the Valley mills will, this winter, hold their cement until there is a market for it and not attempt to force it upon dealers who do not need it, at less than cost. The coal people never sell coal at less than cost in this climate in summer, simply because their sales may drop off, and the ice companies do not attempt to sacrifice great quantities of good ice in winter at a net less, but have the ordinary intelligence to store it until there is a seasonable market for it. In the same way if the cement stocks are protected throughout this winter until there is a fair and proper demand, there is no reason why any cement should be sold below cost from now on. Unfortunately many of the cement mills have been managed with such a lack of intelligence that they have not known what it cost them to make cement and are just beginning to learn this in their exigence. They have been figuring their mill cost without writing off a proper depreciation or figuring just as important charges which are just as vital a factor in the cost of cement as any manufacturing cost. The cost of cement, naturally, should be figured including even the nails in the barrels or the string on the bags at the time the package is turned over to the customer and a depreciation of 15 per cent annually is none too great for the average mill, as proven by actual statistics. The fact that there is practically not a single mill in the whole Lehigh Valley whose stock is selling at par or who can show a legitimate dividend earned for the last year, should arouse sufficient interest among the stockholders to force intelligent handling of these great plants which have cost so many millions of dollars and which turn out so important and necessary a product and indications point to the fact that the awakening has come. The average price of cement at the present time is still too low to show even a fair dividend to the stockholders who have trusted their money in these large enterprises, but new prices are being made on a more nearly reasonable basis.

Meantime the consumption of cement seems to be increasing throughout the world. England is getting short of cement and is extremely busy, their many plants being driven to high capacity.

This country ought to have a ship subsidy, but meantime if the large steamship lines will try to make rather close ocean freight rates, we thing there may be an outlet for more American cement for export than in the past, even at slightly better figures, but prices in this country have not advanced in proportion to the prices abroad. In Canada we all know there has been a shortage, more particularly a threatened shortage. There is not any great amount of American cement which has gone across the border, but still every hundred thousand barrels help to reduce the stock in this country and even in Mexico, notwithstanding the turbulent times there, the demand has been quite heavy. Therefore, as indicated, from all sections there seems to be a demand for portland cement which is on the increase and this country would do well to hold their present surplus stocks, which are smaller than last year, for fairly good prices and try to make up some of the deficits which have piled up in the industry.

We have tried an answer your inquiries in detail, as requested, and if we have not been sufficiently specific, we will be glad to have you put any direct question to us, to which we will reply, if consistent and within our knowledge. In conditions such as have existed in the cement industry, there is only one way to proceed, in our opinion, and that is to call a spade a spade and look the errors of the past right in the face.

Demand is Better.

Stocks at the present time, we believe, are not as large as they were a year ago, the demand is better, and prices are somewhat higher. Shipments are being curtailed to some extent by reason of car shortage, particularly in the West. We are looking forward to a large business in 1913.

Stock is Higher.

Price is about 33⅓ per cent higher in the East than six months or a year ago and the stock of cement is lighter than the corresponding period of last year. We have also closed orders on the latest advance and prospects look good.

Price Shows Advance.

The present price in the North for new business compared with six months ago shows an advantage of 20 cents to the mill. In the South, from 10 to 15 cents per barrel to the mill.

Stocks would naturally be much lower at the present time than six months ago, but they are very much lower than they were this time last year, and we have more cement under contract than we had this time last year.

We do not think the volume of shipments will be very much greater than last year, due to the fact that shipments the first six months of the year were small, and at the present time the mills have not enough stock on hand, nor the railroad companies equipment to move sufficient volume to show a very decided increase over last year.

In reference to the last paragraph of your letter, it is not a question of preventing customers from starving in case of a car famine, as the car famine is already here, and we have felt it very severely both in the North and the South for quite some time.

Showing Improvement.

Replying to your favor September 9, there is no doubt that the cement industry is showing an improvement, both as to volume of business and increase of price.

Answering your questions:

Our price Sept. 1, 1912, is about 15c per barrel higher than it was a year ago, and a little over 20c per barrel higher than it was six months ago.

Our stock of cement on hand Sept. 1, 1912, is only about one-third of the stock we held six months ago, and the stock on hand Sept. 1, one year ago, was only about three-fourths of what we had on hand six months ago.

The contracts on our books and the reasonable expectation of orders to come in, makes us reasonably sure of a good volume of business for the next four months. We think the prospects in view will guarantee a volume of business somewhat greater than last year.

It seems unfortunate that there is so little co-operation among the various manufacturers of Portland cement. There seems to be less co-operation among the manufacturers of Portland cement than among the manufacturers of many other commodities.

Car Shortage—This subject has been exhaustively discussed by everyone, and I notice there is always a failure to point out the only real and true remedy, and that is, that the railroads must buy more cars. It is clearly our impression that they have not bought sufficient cars to keep pace with the increased volume of business.

We do all we can to impress upon the buyer the unwisdom of buying "from hand to mouth," and that he should keep a stock of cement as he keeps a stock of coal or brick or lumber or anything else that he can not always buy "from hand to mouth." Up until recently, he has not realized the value of our advice; consequently some buyers are suffering greatly for want of Portland cement.

Price is Higher.

How is the price compared with six months and also one year ago?

In answer to this the price is 20c higher than a year ago.

How is your stock on hand, compared with the same period?

Very much lower. We have contracts on our books at the present time to take care of our production for the next four months.

The volume will be less than it was a year ago, which is due to the fact that the curtailment of the Lehigh Valley for the first six months of the year amounts to 3,000,000 barrels less than was produced in 1911 for the same period.

The Portland Cement Companies in the East as well as the middle West need co-operation. No Portland cement manufacturer can expect to run his mill 100 per cent whether he is a large man or a small man, and expect to sell his production in the next year. One big mill in the middle West may be able to do it, but in the East it is an impossible proposition.

The curtailment of production in the Lehigh Valley for a period of 45 days says from January 1 to February 15, would be 3,000,000 or more barrels of cement, and the consumption in the East this year will be about 3,000,000 less than it was last year.

IN THE CENTRAL WEST.

Little Stock on Hand.

Beg to say that we have very little stock in our warehouse, same being lower now than it has been for the past two years. Prices have also advanced from 20 to 25 cents a barrel, and we are looking for a further advance. We are having quite a demand for cement, and believe, from the present outlook, that this year's business will be greater than last year's. We would advise the purchase of cement now, with shipments to go forward as soon as possible, as, from all indications, a car shortage is bound to come.

An Overwhelming Demand.

The manufacturers' warehouse and bins are getting very scant. There is an overwhelming demand for cement, and the prices have advanced 10 and 15c in the last ten days, and, no doubt, they will advance 5 or 10c more in the next ten or fifteen days.

Upon comparing the present prices with those of six months ago, we find that they are 25c higher, and about the same amount higher than they were a year ago. The contracts on our books are exceedingly low. Our sales for the next three or four months look very encouraging.

The season of 1912 was late in getting started, but we believe that at the end of the year it will show a considerable increase over last year.

With the abundant, large crops, there certainly is a car shortage facing us. Cars are getting tighter every day with us, and we are continually calling the attention of our customers to the fact that it is the dealer who has cement in his warehouse at this season of the year, who gets the business.

We think that 1913 will be one of the best years in the history of the industry.

Cement is Higher.

Cement is now selling in our locality from 18 to 21c per barrel higher than six months ago, and 7c per barrel higher than one year ago.

One year ago we had 15,000 barrels of cement in our bins, and we now have about 1,500 barrels.

There is an unprecedented demand for cement at the present time, and unsolicited business is coming to us faster than we can take care of it, and at the advanced prices.

Judging from the present demand for cement, and with every assurance from builders and contractors that they will have more work than they can do for the next year gives us every assurance that the demand for cement will be greater the next year than any year in the history of our company.

From personal interviews by the writer with dealers and contractors in different cities is very good evidence that the cement mills of the country will have plenty of business, and its up to the manufacturer of cement to get a price for their product that will pay them a profit, and there is every incentive among Michigan mills, I think, from now on to realize more money for their product. Of course, we have now and then a few mills who insist on quoting a few cents lower than the other fellow, but the dealers in general are getting where they point their finger at him and say, "How foolish." The cement manufacturers are entitled to a legitimate profit, and it is not the fault of the dealer, contractor or consumer that he has not had it, as they all admit that cement has been entirely too cheap. I have even had dealers inform me that they had bought cement so cheap that the stock after being put in their warehouse did not look good to them.

We are going to have bumper crops, and the good, old farmer is making money, and the railroads are making money, and most every other kind of manufacturer is making money, why not the cement manufacturer make money? I will answer this by saying "it's up to him."

The car situation is tightening up, and we are experiencing some trouble in getting cars at this time, and are satisfied the near future will see a very acute stage of the situation.

Prospects are Greater.

We have prospects for cement business greater than last year and greater than ever before. Prices should be $1.25 a barrel, but it is only $1 now. We conclude it will be higher in the near future. Cars are getting very scarce and we have many more orders than we can fill.

Conditions are Improved.

Replying to yours of the 9th inst., will state that conditions in our line have materially improved. Prices are approximately 30c per barrel above six months ago and about 20c per barrel above the same period last year. Our stock on hand approximately the same, very few contracts on our books, but the general demand is sufficiently heavy to insure shipment of all the cement we have or can make before November 1. Expect to exceed 1911 very little.

Realizing a prospective car shortage we, as early as July 25, circularized our trade, urging them to stock up with cement. It is now doubtful whether we will be able to secure sufficient railway equipment to move our product. There is no use encouraging the dealer to stock up at present as all manufacturers are utterly unable to secure sufficient cars to move cement ordered from day to day.

Price Has Advanced.

The selling price of cement at mills has advanced, as you suggest, during the past few weeks, and is probably 10 to 15c per barrel higher than six months ago. The present selling price is, however, just about the same as it was a year ago, as prices in 1911 were steadily falling during the season, while in 1912 they have been advancing.

We can not say that we have contracts assuring certain sale for next four months. We could doubtless make such contracts at present price as demand appears active. The same can be said of prospects for next year, which are favorable but not yet assured. We avoid as far as possible making contracts for a long time in advance, believing this to be a losing game for cement manufacturers, amounting to practically an option in view of the complete lack of co-operation in the industry.

The present intense car shortage deprives manufacturers of most of the advantage of present healthy demand. This conditon is extremely bad at present and appears to be getting worse.

Prospects Look Better.

We are pleased to advise that the prospects for business for the next three months look better than they have for the past four years. We are also pleased to advise that the outlook for better prices is much brighter. As far as our company is concerned, we have about all the business we can attend to for the balance of the year. We have had some trouble in getting cars.

IN THE WEST.

Price Steadily Maintained.

Replying to yours of September 9, beg to say that the price of cement is about the same as it was six months and a year ago, although we find it more steadily maintained.

Our stock on hand today is greater than it has ever been in our experience.

The contracts on our books now assure us of a certain sale for quite a lot of cement during the next four months and we think our total for the year will be greater than last year.

We have been very patiently trying to impress on our customers to keep a good cement stock on hand, so that the car shortage will not cause them to be short. In this locality we always feel the car shortages during the time that dried fruit and oranges are moving eastward; that means the months of September, October and part of November.

Don't Know What to Do.

We are in receipt of your favor of the 9th making inquiry in regard to business and beg to advise that we now have so much business that we don't know what to do with it all.

Conditions Improved.

Conditions with us are somewhat improved and we hope that the cement business will soon be put on the same basis that the stockholders will receive a dividend in the way of interest on their investment.

We are anticipating a car shortage this fall and have gotten out a circular to the trade, a copy of which we herewith enclose.

So far we have experienced very little trouble on account of shortage of cars.

Price is Higher.

1. Our price is 9c per barrel higher than it was one year ago and 20c per barrel higher than six months ago.
2. Our stock on hand is only half what it was a year ago and about half what it was six months ago. We have been running steadily this season and marketing our output at good prices.
3. Contracts on our books and general business which we can reasonably expect should give us a sale for our product to practically the first of December of this year. At that time cement in our territory practically shuts off. Our business is very quiet until the latter part of February.
4. The general outlook is such that we expect the spring of 1913 to open up with a better volume of business than did the spring of 1912.
5. In regard to car shortage, desire to say that we have not been troubled in this way in any respect.

Tendency is Upward.

There is a tendency to increase the price of cement 10 or 15 cents but the demand for cement is very meager, not being as good in this section as it was last year. The farm products are exceptionally good but I can see nothing that would indicate an advance in the demand for cement for some time to come. We have on hand 200,000 barrels of cement and clinker at the present time.

The car shortage is about as it was a year ago but notwithstanding this fact we are getting along fairly well.

Price is Firm.

The price in this territory is very firm and has been advancing very steadily. It is not possible to make an exact comparison with last year for, at that time, there really was no staple price.

Our stock is about normal for this time of the year. Business already booked and prospects guarantee a volume of business during the remaining portion of this year that will be limited only by car supply. We are doing everything we can to induce the buyer to anticipate his requirements against almost certain delay in shipping due to car shortage. We are already experiencing some difficulty in getting an adequate car supply and expect it to be much worse as the season advances.

Price is Increased.

Present prices are 50 to 55 cents per barrel higher than six months and a year ago. Warehouse stock of mills in this district are practically exhausted. We have sufficient contracts booked at present prices to take our output for the next ninety days. The general trend of city and country trade shows a much increased demand over last year.

We are experiencing the approach of a car famine and are advising our customers to fill their warehouses before the handicap takes place. We believe all of the cement companies in the Kansas and Oklahoma districts are experiencing similar conditions.

Price 15 Cents Up.

Replying to yours of the 9th inst. will answer your questions in the order in which they are asked in your letter.

1. Prices in this territory are about 15 cents per barrel higher than six months ago and about 10 cents below what they were a year ago.
2. Our stock on hand is about the same.
3. Unfilled contracts are about the same.
4. The prospects in this territory are good for a good business next year and we hope it will about reach the 1911 level.
5. We have notified our customers to order as far ahead as possible to give us as much time on shipments as possible and to order cars loaded to capacity. This we did several weeks ago.
6. Our local situation on car shortage is not as bad as we presume it to be in some other sections of the country but is becoming more serious and we look for a decided shortage by October 1, although we are trying to co-operate as much as possible with the railroads and our customers to avoid this.

The general cement conditions are somewhat more favorable, but they are not yet on a settled basis, in other words, it is still impossible to figure with any degree of certainty on future requirements or even immediate shipments.

As I said before, we are rather inclined to believe that next year will be a good year.

THE CEMENT SHOWS.

Copies of the rules and regulations, floor diagrams and application blanks have been placed in the hands of the prospective exhibitors at the Pittsburgh and Chicago Cement Shows. With these, announcement has been made that the first general drawing for space will be held in the office of the Cement Products Exhibition Co., 72 West Adams street, Chicago, on September 26th, and that applications to be considered in this first allotment must be filed on or before September 24th. Report from the office of the Exhibition company indicates that interest in the coming exhibitions is undiminished.

Pittsburgh seems to have been an especially fortunate selection for a show, and the success which has attended previous exhibitions in Chicago will undoubtedly follow this venture into the new field. Exposition Hall in Pittsburgh is within walking distance of all street cars, railroad depots, hotels and department stores. The merchants of Pittsburgh have held in this hall for the past nineteen years an annual exposition of merchandise. Over 360,000 people paid admission last fall. The building was built for expositicn purposes at a cost of over a million dollars. It is free from columns and posts to obstruct the view of the building. According to the last census, the population of Allegheny county was 1,018,642. This makes Pittsburgh and the boroughs surrounding it, the fourth largest in the United States. Within a radius of one hundred and fifty miles there reside five million people, including western Pennsylvania, eastern Ohio and West Virginia. The Pittsburgh show will be easily accessible in a big and active territory in concrete construction.

President Richard L. Humphrey is pushing vigorously the plan and program for the Ninth Annual Convention of the National Association of Cement Users, which will be held in connection with the Pittsburgh show.

The annual cement shows are held for a sound reason. The cement industry, big as it already is, permits of plenty of room for growth. There are possibilities for development, scarcely realized today. And it is not only that the present classes of construction will be far more widely adopted, but also that the field of concrete will widen. Important advances in the use of concrete have been witnessed in the last few years. We have noted changes in block construction. The rock faced is now giving way to a large extent to the plain faced block of much wider application and of much more architectural beauty. There is to be noted an increasing use of special aggregate for the purposes of concrete building walls and concrete products of all descriptions, particularly in the facing of concrete blocks. There is a fuller appreciation of the advantages of careful mixing of concrete and the proportioning of materials in order to get watertightness. There is realized the precautions necessary for winter concreting to insure safe construction. It is largely since the quality of workmanship and the choice of materials have reached the high degree of perfection that concrete has been recognized as a competitor of the older and more expensive building materials. And now that equally pleasing structures may be obtained in concrete at prices which make the adoption of concrete a distinct saving, its use cannot but be universal.

Again, the development of the concrete road has opened tremendous possibilities to the contractor who in the past considered a four or five inch concrete base under a wearing surface of other material, ideal construction. Today, where popular sentiment is for the improvement and speedy improvement of town roads or country highways and where the funds are not very large, it is possible to save perhaps one-half more square yards with concrete than would have been possible before the practicability and the economy of concrete as a pavement had been demonstrated.

The average man, be he contractor or engineer, is in touch with but a limited part of his field. His interests are perhaps local or at least cover but a part of the concrete field. But for his best development, he needs to at least get in touch with every phase of the industry. The city or county engineer has many problems which can be solved in concrete in which the changes of standard practice are frequently occurring. Unless he is widely traveled, he cannot keep pace with the newer developments and the newest methods. It is, of course, true that the exhibitors at the cement shows are for the most part intensely interested in making money through the sale of a particular commodity or system which they are advancing. But this very attitude on the part of the exhibitor increases the efficiency of the cement show as a whole for educational purposes.

CHICAGO CEMENT NEWS.

Chicago, Ill., Sept. 21.—A large consumption of cement this year caused by the great prosperity in the agricultural districts of this country and also large shipments into Canada has reduced the stock of mills lower this fall than it was last year. It is in that sense that a scarcity of cement is spoken of. Prices have advanced steadily during the last two months and the demand has been greater than in previous years. Conditions in the cement trade would be excellent this fall were it not for the car shortage which is becoming more acute daily. Cement manufacturers have been behind in their shipments for a month and being unable to get the cars required are now "up against it." Shippers have done all they could to cooperate with the railroads, loading cars to their full capacity and quickly, causing as little delay as possible. They now ask railroads to cooperate with them and rush to them empty cars standing idle at various points, which would help matters at this time to some extent.

J. U. C. McDaniel, traffic manager of the Chicago Portland Cement Company, said: "Conditions in the cement trade as far as prices and demand is concerned were never better. But we are up against it on the car shortage situation. Shipments are irregular and slow, we cannot get the cars, which is felt keenly, but we are doing the best we can. We have the cement at our mills to supply the demand, but cannot make the deliveries. Prices are strong and advancing."

E. L. Cox, general sales agent of the German-American Portland Cement works, said: "The situation is growing worse daily in connection with the car shortage, we have more business than we can take care of. Customers are offering any price to get cement but we can not get the cars. Conditions are excellent outside of this."

B. F. Affleck, general sales manager of the Universal Portland Cement Company, stated: "We have been behind in our orders for the past thirty days. We get cars for shipment one day and then for some days we are without any. We are doing all we can, but this condition, which will become more acute before long, will keep us more behind with our orders with every week. We have lots of cement in our bins to supply the demand. Prices are advancing and conditions this fall are good with this exception."

The Marquette Cement Manufacturing Company finds itself in the same predicament as the other cement companies in regard to shipments. It is behind in its orders notwithstanding the efforts made to deliver cement promptly. It can not get the cars required and believes the situation will grow worse in the next thirty days. Otherwise conditions are good, prices advancing and demand great and urgent.

NEW YORK CEMENT NEWS.

New York, N. Y., Sept. 18.—Conditions in the local cement market have improved considerably during the interval. The volume of business has been heavy and the brisk demand is predicted to continue for at least the next two or three months. The price of cement was advanced to 80 cents. in bulk, at mill, September 1, and cement manufacturers predict that it will go to 85 cents in the near future. The cement stocks in bins and storehouses have diminished considerably and dealers claim that they will clean up entirely before next month. The local situation is in a much healthier condition that it has been for some time. The prospects for the fall business are bright and from the large number of building plans filed lately the demand for cement next spring is also promising. The Biltmore Hotel, Equitable Life Assurance Society and the Adams Express Company buildings will consume 165,000 barrels of cement alone.

It is reported from Washington that only two bids were received for supplying 1,000,000 barrels of Portland cement for the Panama Canal, and were from the Santa Cruz Portland Cement Company, of San Francisco, Cal., and the Alpha and the Lehigh Portland Cement Companies, which made a combined bid. The bid submitted by the Alpha-Lehigh companies was $1.91, and $1.97 for the Santa Cruz Cement Company. The former quotation was f. o. b. Jersey City and the other f. o. b. San Francisco, in units of eight bags to the barrel, instead of four bags, and an allowance of 10 cents for the return of the empty bags in both bids. An official of the Alpha company stated that the Government officials were now inspecting their plant and examining the machinery. He also was confident that they would receive the contract.

It is interesting to note that cement is being shipped from New York to the interior of Canada. On August 24, the steamer Ragnarok sailed for Chicoutimi, Province of Quebec, with a cargo of 550 tons valued at $4,325.

W. P. Corbett, secretary of the Alsen's Portland Cement Company, had the following to say in regard the local cement situation: "A marked improvement was noted in the demand for cement during the past month. Business has taken on a new lease in life and the heavy consuming demand for cement has caused a noticeable depletion of stocks in bins. We have been doing a good amount of business and are of the opinion that business will continue to improve throughout the fall months. The cement situation is brighter by far than it has been for some time, and the bumper crops which are assured to us will in all probability tend to a general business improvement throughout the country. We are doing brisk export business generally to Central America, Mexico and South America."

E. F. Miller, of the Lawrence Cement Company, stated: "The demand for cement was very good the past month, and in fact it has been one of the best months so far this year. Cement companies advanced the price to 80 cents, in bulk, at mill, on September 1, and they further predict that it will reach 85 cents before long. Business has been so good that many companies have cleaned out their surplus stocks and are working at their full capacities to fill their orders. In the meantime they are purchasing cement for immediate delivery. Prospects are very bright for the balance of the year and manufacturers are optimistic regarding the outlook next year. We are manufacturing waterproof cement and are using the McCormack waterpoofing process. This process has been successful and we are doing quite some business. The majority of waterproofing processes weaken the cement, but we have found the McCormack process makes it much stronger. The outlook was never better, and prospects for next spring are also good."

LOUISVILLE CEMENT NEWS.

Louisville, Sept. 18.—A rising market has exercised a potent influence for good on the cement trade in this territory, and concerns in that line of business are almost overwhelmed with the incoming tide of orders. Cement has advanced rapidly and surely recently, present prices in this vicinity being about $1 a barrel, as compared to quotations of 70 and 75 cents a short time ago. In some instances prices are held as high as $1.10, and orders at this price are so numerous as to cause several concerns to refuse them absolutely. One or two companies report being in the unique position of having so much business that they are unable to care for it properly.

Prospects for the next few months depend largely on the state of the weather. Natives of high standing as prophets in this particular respect declare that the coming winter will be an extremely mild one, and will make its appearance late in December. These favorable predictions are backed by more official ones from the weather bureau, which asserts that a long Indian summer is due. With weather conditions favorable, there is no doubt but that cement men will continue to transact a mighty volume of business in the course of the new month or so.

Officers of the Kosmos Portland Cement Company, of this city, are somewhat worried because of a speck on the horizon, which bids fair to develop into a car shortage of serious proportions. As yet the shortage has been only hinted at rather than being actually on the ground, but every indication points to a scarcity of cars in the very near future, say officers ot the prominent Louisville concern. Sales Manager C. M. Timmons stated that many of the railroads had concentrated every available car in the Northwest, which this year has been the scene of a banner wheat crop after only a fair one in 1911. Immediate transportation for the grain was necessary and the railroads are doing everything within their power to provide this. At the same time, they are inclined to neglect their regular customers, and the result probably will be inability to serve their clients promptly in the near future. Mr. Timmons, however, is enthusiastic over recent business and asserts that the prospects leave little to be desired in the cement trade.

J. B. Speed & Company, one of the leaders in the local cement field, recently added a two-ton Mack truck to their equipment. The truck, during the short time in which it has been operated, has proven a success in every respect. It is used as largely as possible for long runs, also being utilized for the return of cement sacks. It has been invaluable in this respect, and seems to have gone a long way toward solving a problem which has given officers of the company some concern. Contractors working on big jobs have in the past been a bit slow in returning the sacks after they had been emptied. In some cases the delay proved to be a bad thing in other respects, many sacks being made away with by hangers on. J. B. Speed & Company decided on the truck as the most simple method of securing the return of the sacks in short order. The truck is despatched with a load to the farthest job the first thing in the morning, collecting the empty sacks after its mission is fulfilled. The remainder of the morning is usually spent in visiting jobs and loading the empties. The same routine prevails in the afternoon, and the use of the truck promises to end almost a constant source of dissatisfaction in the cement business.

SAN FRANCISCO CEMENT NEWS.

San Francisco, Cal., Sept. 17.—The cement business is picking up a little, with large shipments to various parts of the country and to points as distant as Vancouver, B. C. The placing of large orders by construction companies, both for work on the new state highways and on power dams, has also been of great benefit to the market. The work of the Association of Western Portland Cement Manufacturers is beginning to produce some results, and is expected to be of much greater benefit in the future. F. W. Rochester, manager of the association, will return this week from a northern trip.

Individual manufacturers are also keeping up their campaign of education. The Cowell Portland Cement Company has a man constantly on the road, making small concrete conveniences for farmers and others to illustrate its advantage and give instruction in the use of cement. His services are in great demand, and the work has been highly satisfactory to the company. The Cowell company's plant is again in operation after a short shutdown last month.

The Pacific Portland Cement Company is making extensive improvements to its railroad between Auburn and the lime quarry near Cool, Cal. Two locomotives have been purchased, and plans are under way for a mound-house and machine shop.

PHILADELPHIA CEMENT NEWS.

Philadelphia, Pa., Sept. 18, 1912.—The price of cement was recently raised 10 cents a barrel for the second time within a few months, owing to the great demand. The nominal figure is now 80 cents a barrel, although during the rest of the year the manufacturers will receive little benefit, because most of the product was contracted for early in the season when quotations were 60 cents a barrel and even as low as 55 cents. If the Lehigh region were not short of about 4,000 laborers it is doubtful whether there would have been a raise from 70 to 80 cents. Even with the great labor shortage in Pennsylvania it is estimated that this state will have an output for the year of about 35,000,000 barrels, or about 14,000,000 barrels more than last year.

Nearly all the cement companies in the state have advertised for labor without any practical results and have finally decided to follow the methods of the employment bureaus of the great iron and steel industries who have applied to the Inasmuch Mission in Philadelphia for their supply of men. The Inasmuch Mission is a "mission" in many senses; not content with rescuing the fallen and destitute, it systematically places these men just as quickly as they feel that they can become responsible for their behavior. They have worked this season with admirable results and have had many "duplicate orders" from the great industries of the state.

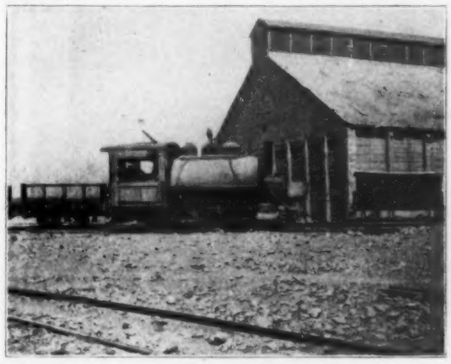
William Kent, treasurer of the Whitehall Cement Company, with Mrs. Kent and the Misses Marjorie and Nancy, will spend the season at their residence at Chelsea, instead of their winter home in Wyncote, Pa.

GUADELOUPE CEMENT IMPORTS.

With the exception of Pointe a Pitre, the chief commercial city, the towns of the colony of Guadeloupe grow slowly and sufficient buildings to house the better class are already in existence. The poorer class meet the problem presented by the increase in population by putting more persons in the house or room. In the country, the laboring class live in shanties built entirely of wood. No new factories are being erected and but few residences.

MANUFACTURE OF PORTLAND CEMENT

Cements and plasters have been necessary elements in the building industry ever since the primal man reasoned that he needed better shelter than an improvised hut of boughs and skins. He first began by grinding the softer stones into powder by using his crude morter and pounder and mixing this crude mud with sand, daubing up the



TRAIN HAULING LIMESTONE.

chinks in his rude hut. Progression has brought cement down to the present day, and it is needed much more now and is more extensively used than in the early days. More is expected of it, and, since it must enter into the modern world and play an active part in the busy business world of today, so must the modern methods and scientific applications take a hand in its successful manufacture. Portland cement, that which is more widely used and distributed than any other, and with which

IN THE KILN HOUSE.

this article will treat, is carefully compounded by expert chemists and is manufactured under their constant care and supervision.

Expert care must be maintained in the procuring and use of raw materials. Cement is manufactured from carbonate of lime, found in the forms of chalk, marl or limestone; and shale, which is the clayish element and color of slate. The limestone should be as pure and as free from such foreign elements as magnesia and sulphate of lime as possible. Three and one-half per cent of the former is allowed, however, and two and one-half per cent of the latter. The shale should be highly impregnated with a siliceous salt or compound, low in magnesia and the sulphates, and almost totally free from sand.

The raw materials are usually quarried or tunneled. The Kansas City Portland Cement Works, whose offices and headquarters are in Kansas City, Mo., has a plant on the banks of the Missouri river some twenty-five miles below the mouth of the Kansas river, and so situated that at its front door flows the muddy Missouri and at its back door it has the two hundred feet of precipitous cliffs. It is into these cliffs or banks of solid rock that the company tunnels, at no small expense, and finds the best of raw materials.

By means of a small "goat," or, as the workmen affectionately name it, "dinkey," engine, four or five construction cars are used to convey the rock as it is scraped from the tunnel, to the crusher. The two grades of rock, lime and shale, are seldom found in juxtaposition; they are obtained from two entirely different places, and are kept rigidly separate—for to mix the two at this time would mean that the best proportions could not be obtained.

The crusher is a most simple affair. Placed longside the track and just under one end of the building, the material is dumped into a funnel-shaped affair, some twenty-five feet across at the top and three feet at the bottom. Protruding through this funnel is another cone-shaped metal instrument, regularly ribbed like a washboard, which swings from side to side and back again to repeat, but not in a rotary motion, and crushes—not grinds—the huge lumps of rock to the size of a man's hand. This drops through a space just large enough for it at the bottom, and is conveyed by means of automatic buckets to large tanks. There are four of these tanks, each having a capacity of seven hundred tons, and two are used for storing shale, or low rock, and two for limestone, or high rock. From these tanks the rock is drawn as needed, in the right quantities and in the right proportions. Enough rock can be taken from the tunnels in ten hours to keep the plant supplied for twenty-four hours, which time the cement plant is always running.

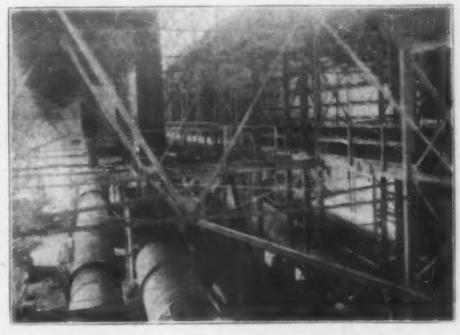
Leaving these tanks, the stone is drawn first into the kominuters. These are huge drum-shaped instruments whose function is to grind the rock to pebbley fineness. The action of a kominuter is similar to that of a ball mill. That is, the interior being lined with wrought steel arranged so that one plate laps over another in a step-like arrangement, as the drum revolves, the huge steel balls drop from one step to another in company with the rock, crushing it to almost sandy fineness. This tinge of grit, this sandy feeling and aspect must be removed before the chemical change wrought by burning takes place. The process which removes it and makes the mixture almost as fine as the finished product is known as tube milling.

The tube mills are a series of long cylinders, twenty to twenty-two feet long, lined with armor plate, chilled steel or sometimes flint, contains flint balls of irregular size and shape. These cylinders revolve at the rate of twenty-five or twenty-seven times a minute. The product is much coarser even yet than the finished or commercial cement.

From the tube mills the ground compound goes to the kilns. This is the last and most important step in the finishing of the raw product. The mixture transferred from the tube mills to the kilns, the process of burning starts at once. The kilns are enormous revolving cylinders, some hundred and fifty feet long. They are also made of steel sheets and are lined with fire brick. Lined, these kilns are from six to seven feet in diameter at the upper or cooler end, but taper to a diameter of some six inches smaller before entering the stack. A slant of about one-half inch to the foot throughout the entire length of the kiln causes the mixture after entering the kiln to slowly progress down the cylinder to the hottest end. It is into this end that burning coal dust is blown with tremendous force and resulting in a terrific heat. As the raw product enters the upper end and is slowly induced by the slant and rotary motion to slide along in the tube, it begins to slowly lose all the water and carbon dioxide which it might

TRAIN FOR HAULING ROCK.

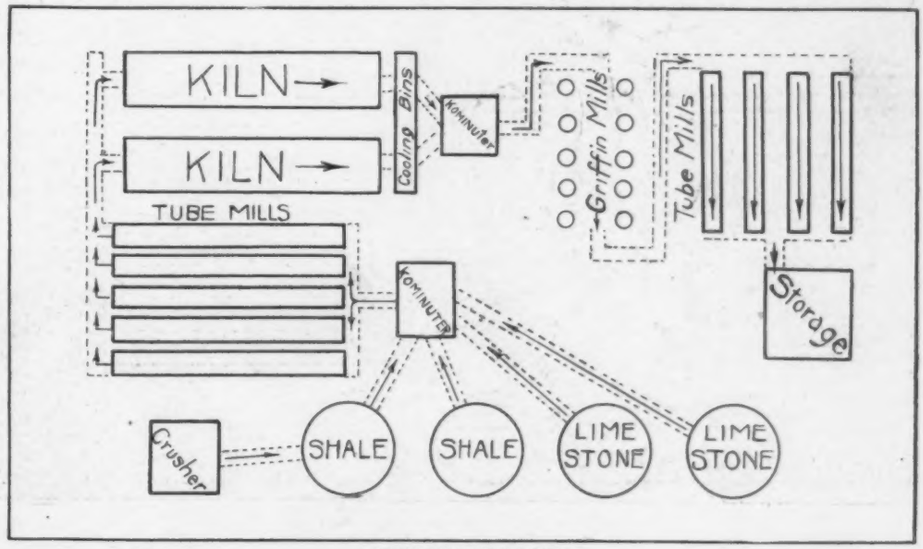
contain. As it gets hotter and hotter, the lime, silica, alumina and iron form a partially fused mass, this chemically combined mixture being



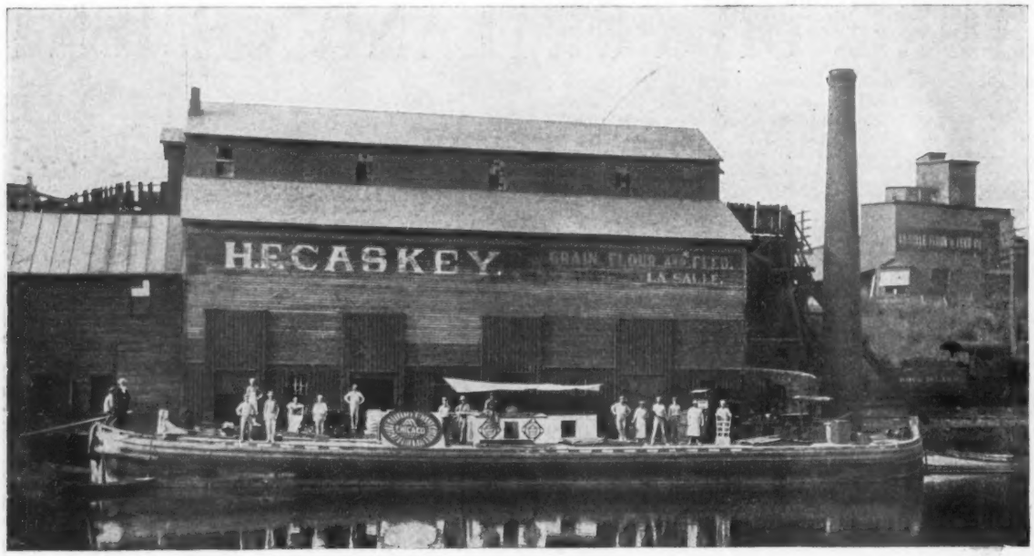
IN THE QUARRY.

known as "cement clinker." It is of a blackish-yellow color, looking not unlike the coal clinker, and, as a great heat is constantly maintained in the kiln, by the time the product reaches the hottest end all is burned to this form.

After cooling in great vats or bins, the finishing



PLAN OF THE PLANT.



LOADING AT LA SALLE; AUGUST 24.
Barge "Redwing" Taking on Cargo of Chicago AA Portland Cement at La Salle, Ill.

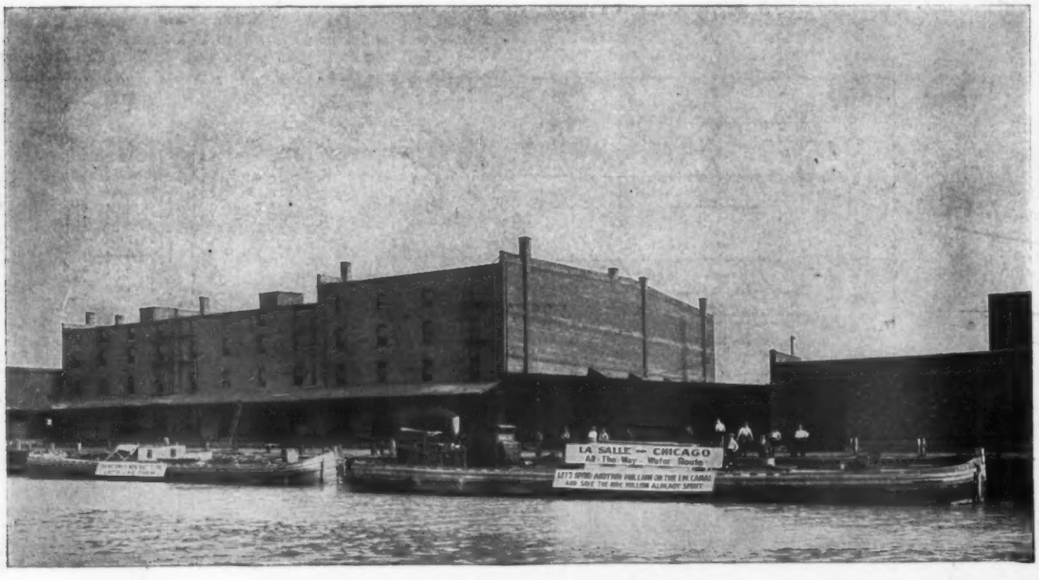
process takes place. The rock, although in a greatly changed form, is yet rock, and goes through almost identically the same process that it did in the raw state—comminuters and tube mills—with the exception that there is an intermediate process which grinds the clinker as fine as flour. The Griffin mill is the name of the interesting machine, or series of machines, which accomplishes this task. In appearance the Griffin mills look like druggists' mortars on a huge scale, and their function and action is precisely the same: large pestles revolving at a tremendous rate in proportionately large mortars. The tube mills then mix the two per cent of gypsum which is essential, and grind it all up together—put on the finishing touches, as it were—and the product, now completely pulverized, is ready for the storage rooms. The storage rooms are almost as large as the producing plant itself and has room for two hundred thousand barrels of cement.

All cement must undergo physical and chemical tests. The chemical test takes place every hour. Samples are taken from the raw state, or the first comminuter, and one from the finished or last grinder. One gram of cement sample is mixed with several cubic centimeters of dilute hydrochloric acid, and the mixture is boiled. Then an alkali is added till the point of neutralization is reached, and a careful account of the amount of the alkali is noted, compared with an intricate table of values, and, if the standard of perfect cement, namely 76 per cent, be not attained, more shale is ordered to be added if the mixture is too high, or more limestone if too low.

Samples are also made into "biscuits" on which the date is stamped, together with the hour of making. Some of these are laid away in a receptacle, and tested every hour for the time it takes for "setting." Other of these "biscuits" are subjected to the treatment of a steam bath, from which they are taken at the end of twenty-four hours and tested as to their breaking powers. A quick setting cement is that which sets in fifteen minutes to two hours. But the best cement for the most particular uses is the slow setting cement, or that which takes eight hours or more to set.

"Briquets" are made every hour and hardened in moist air and under water. At the end of twenty-four hours the "briquet" must stand a pulling or "tensile" strain of one hundred and seventy-five pounds. At the end of seven days another number of these briquets are subjected to the tensile treatment and must stand a pull of five hundred pounds. Then, again, at the expiration of twenty-eight days, a briquet must stand a strain of six hundred pounds. Most companies find it to their advantage to maintain a higher standard.

So, with lumber going to prohibitive prices, cement, being much cheaper, cleaner, lasting and durable, is taking its place as a more important factor, and something which indeed we could not get along without for no great length of time.



DOCKED AT CHICAGO, AUGUST 28.
Barge "Redwing," with Cargo of Portland Cement, in Tow of Steamer "Peerless," Docked at Chicago, August 28. Trip of 98 Miles Made Without Mishap, Through old Illinois and Michigan Canal.

INLAND WATERWAYS

Chicago Portland Cement Co., Makes Test Shipmen Over Illinois and Michigan Canal.

Saturday, August 24, was an eventful day in the annals of the Chicago Portland Cement Co. Then, for the first time, an effort was made by the company to establish a freight route by water from La Salle to Chicago. A steam barge and tow boat, named "Peerless" and "Redwing" respectively, were commissioned for the purpose and departed with the good wishes of hundreds of Illinois manufacturers, all of them keenly interested in the experiment, and who had assembled at the starting point, La Salle.

Chicago, a distance of 98 miles, was reached safely four days later, and the entire cargo, 1,000 barrels "Chicago A" Portland Cement, unloaded and warehoused without mishap.

Successful in every respect, the experiment disproved the idea that the I. & M. waterway, completed as far back as 1848, was no longer navigable. The idea is now to remodel it after the Hennepin Canal, completed in the year 1907, and thereby afford manufacturers in that section of the country a water route both East and West.

One million dollars, it is estimated, will suffice to make the necessary improvements on the older waterway, and the Illinois Legislature will be asked to appropriate that sum for the purpose when it meets in January next.

CEMENT TRADE IN NEW BRUNSWICK.

No cement other than Canadian made is now sold here, all in bags of one-quarter barrel, full barrels containing 350 pounds, including weight of barrel.

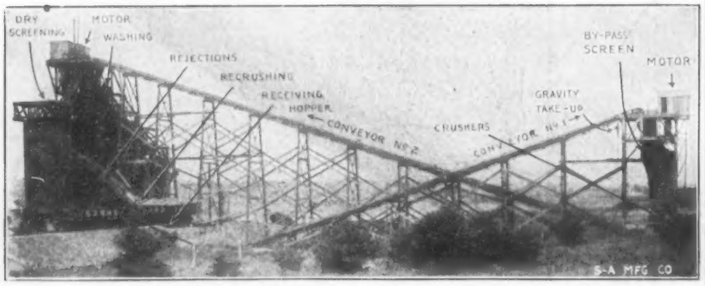
One dealer states that he could use American Portland cement laid down here in barrels at $1.69; he stated that high freight rates prevented its use, but would buy at that price laid down here, including freight and import duty. The regular import duty on cement of 12½ cents per 100 pounds, weight of containers included, has been reduced to 6¼ cents per 100 pounds until October 31, 1912. Possibly low freight rates might be obtained on vessels coming to this district for gypsum, which generally comes in ballast. While the majority of such are steamships and too large to come to Moncton, there are sometimes schooners of 200 to 350 tons which would no doubt be available for such cargoes. The docks here can accommodate vessels of 800 to 1,900 tons, but not larger.

A second dealer said that Portland cement users have become accustomed to using the cement in bags, and that his customers preferred it so packed, but the other firm states that it is much preferred in barrels, and that the only reason it uses bags is that the Canada Cement Co., which sells almost exclusively in this district, will supply only in bags. Cement is sold at $2 to $2.50 per barrel, depending on amount wanted by purchaser and time of payment. It would seem that American cement could be sold here, especially as all dealers agree that it is as well regarded as any known in this market. The dealer first named should be able to handle full cargoes for small vessels, and no doubt would, if prices laid down could be made to suit his desires.

The Tennessee Eastern Electric Company, which is erecting a power dam on the Chuckey river, near Greenville, Tenn., as well as preparing to macadamize several miles of road, has ordered no less than 300 carloads of cement, according to reports from that place.

St. Louis, Sept. 20.—The suit against the Atlantic Quarry and Construction Company, Bermond avenue and Montrose street, for blasting without permission of the residents of the city, has been dismissed after remaining several years in litigation. It started in the police court and ended in the Supreme court.

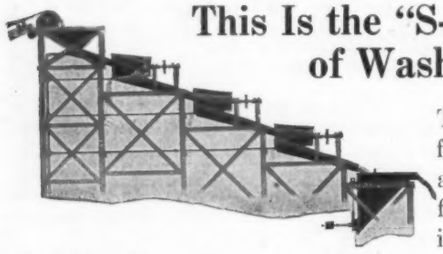
Why Were "S-A" Conveyors and Screens Used Here?



The Largest Gravel Washing Plant in the World

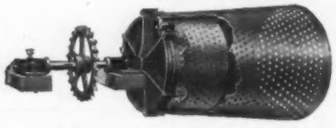
THE largest producers of sand and gravel use "S-A" equipment entirely, in their four large plants. In designing their latest plant (Joliet Sand & Gravel Co.'s Rockdale plant) which is the largest in the world, they specified "S-A" machinery without question on account of the excellent service given in their other plants.

This Is the "S-A" System of Washing Gravel



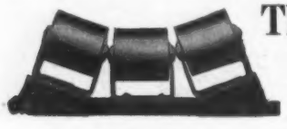
The gravel passes from the hopper at the left to the first screen where it meets a stream of water. From there successively to the next screens, and then to the automatic settling tank, where the fine sand is saved.

The Improved Gilbert Screen



Eleven of these screens were used in the above plant. The small inner skirt triples the life of the outer screen.

The New Unit Carrier



It is the strongest, lightest and easiest running carrier made. The individual units may be adjusted to every operating condition, and to changes in the size of the conveyor.

Our experience in designing two hundred successful gravel washing plants is at your service. Write

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Water-proofing of Cement Work results from the use of

Maumee Compound

SPECIFICATIONS AND SAMPLES ON REQUEST

The Maumee Chemical Co.

403 ST. CLAIR BUILDING

TOLEDO, O.

FOR THE RETAILER

CHICAGO RETAILERS.

Chicago, Ill., Sept. 21.—An extraordinary activity in building operations throughout the city has characterized this season, from its opening rather late in the spring, through the hot summer

OFFICE OF ASTRID S. ROSING, 1128 CORNELIA ST., CHICAGO.

months and up to the present date. More structures in number and value are being erected this year than last, although building permit statistics do not bear out this statement, for the reason that a score of skyscrapers in the loop now nearing completion twenty and more stories in height are given credit to last year's record, their permits having been taken out in that year. The activity in building circles this month is most pronounced in the north and northwest sections of Chicago by reason of our car line extensions and public improvements giving impetus to building up new tracts of land vacant, awaiting this opportunity. Builders' supplies dealers in consequence of this condition have enjoyed a larger volume of trade, than practically in any previous year. This condition promises to list late into the fall until cold weather closes the season. Everything looks bright and the only complaints heard are concerning the low prices of building material which do not leave a reasonable margin of profit.

The Wisconsin Lime & Cement Company reported that volume of business this month was falling off some, but that all of its yards scattered throughout the city are busy hauling material to jobs. Prospects for fall are considered bright. This company is now building a new warehouse at Forty-fifth Court and Gladys street. It will be of brick and iron construction with facing brick all around. It will be the largest warehouse in Chicago devoted to the storage of builders' supplies. A new barn is also in course of erection of brick and iron construction which will stable 75 of the company's horses. These structures will be completed by the 1st of November next.

Geo. W. De Smet, distributor of cements and manufacturer of De Smet's cement tile, said: "This has been a busy month with me, much more so than any previous month during the season and believe the volume of business will be exceedingly large this fall."

"Yes, business is slowing down this month," said J. G. Coates, manager of the Templeton Lime Company's yard at 354 West 59th street, "and so are building operations on the south side around here. Notwithstanding these facts we are quite busy and see enough of indications for promises of a very brisk fall trade. Conditions are satisfactory with one exception, that of prices for building material, which have been too low all year."

W. L. Woods, president of the Standard Material Company, located at 66th street and Lowe avenue, said: "Business has been a little bit slower than last month, probably influenced somewhat by the hot spell during the first two weeks

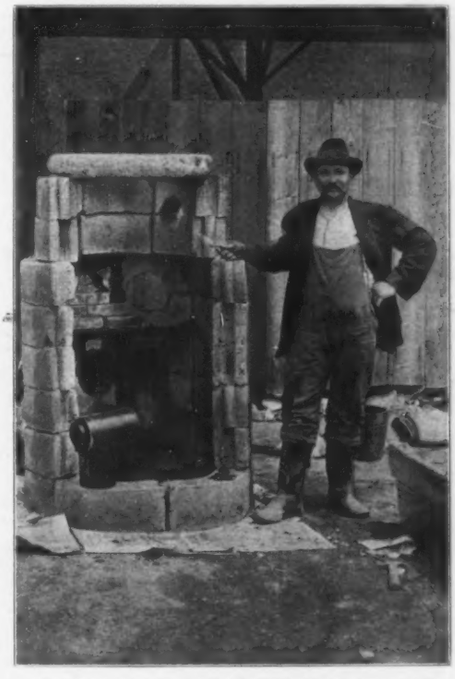
BUILDERS' SUPPLY YARD OF ASTRID S. ROSING, 1128 CORNELIA ST., CHICAGO.

of September. The hot spell delayed many building jobs and stopped some. We have not felt the effects of the car shortage yet. Conditions are good in the trade, prospects promise fine business this fall.

J. B. Tuthill, president of the Tuthill Building Material Company at 431 W. 63rd street near Wentworth avenue, said: "There has been quite a little drop in business from last month, caused partly by the car shortage which we are commencing to feel, and the hot spell. I don't look for any great business this fall."

W. R. Lamoureaux, manager of the Lake Building Material Company at Forty-ninth and Leavitt streets, said: "Building operations in this district continue as active as they have been the past two months which keeps us busy and more so supplying material. This is decidedly unusual for this time of the year. Contractors are too busy to complain and happy to get prompt deliveries which taxes the energies of all of our teams. Prices for building material are stiffening especially for cement which has been advancing in price steadily of late. Collections are poor as usual at this time of the year. We see indications are around us pointing to excellent business conditions this fall.

H. O. Heitmann, president of the Union Coal, Lime and Cement Company, 5840 Ashland avenue, stated: "We are as busy as last month and the volume of trade for the dull season is satisfactory. The territory around here is building up rapidly and while building operations have fallen off some this month the material required keeps our teams busy delivering it to the jobs. I believe there will be a good fall trade but do not look for much of a rush."



GEO. T. CARPENTER'S INTERLOCKING CATCH BASIN BLOCK.

E. E. Hemmings, assistant to H. Diestel, manager of the large building material yard of Astrid S. Rosing, 1128 Cornelia street, stated: "In order to keep up with orders coming in and making prompt deliveries we bought two more teams this month. We are as busy as any time the forepart of the season. We have not had a dull day this summer. It seems that in this part of the city you cannot turn a corner without seeing digging going on for putting in foundations. Contractors start three to four jobs at a time. Prices for building material are low but firm. Conditions are excellent and everything indicates a rushing business this fall."

Arthur Druecker of N. J. Druecker & Co., 2634 North Artesian avenue, said: "We are as busy and everything indicates that this fall will be a record breaker in volume, for builders' supplies dealers."

Paul E. Lambe of Koch & Lambe, 4601 Armitage avenue, said: "We have not had one dull day this month, in fact not one dull day since the commencement of the season in April. A brisk business is certain to continue till snow flies as there never were more buildings started and under way in this district than this month. An impetus to building operations in this district has been given on account of street car line extensions on Armitage avenue from Forty-fourth avenue to Fifty-first avenue, and extensions from Chicago avenue to Forty-eighth avenue on which work is now being prosecuted vigorously."

A. L. Halleman, secretary and treasurer of the Templeton Lime Company, located at Homan and Grand avenues, said: "We have been busy every day since the opening of the building season last spring and there has been no let-up to business this month. Building operations around here are very active and promise to beat all former records this fall. Volume of trade continues large and conditions are excellent barring low prices which are commencing to stiffen lately."

Geo. T. Carpenter at Taylor and Forty-first avenue, dealer in sewer builders' supplies, said: "Business has dropped off some this month which has always been the case in former years in the month of September. I see, however, indications of its picking up by the end of the month when building operations will resume their former activity. Prices have been much better since Aug. 20, and are firm with an upward tendency. Prospects are fine." Mr. Carpenter manufactures an interlocking catch basin block made of concrete for which there is a brisk demand. This block takes the place of brick. It has a patented interlocking dove-tail and groove locking block so that it is impossible for catch basins to fall in. Accompanying illustration shows a trap made of brick in which a 6-inch elbow inverted or a clean out door iron trap can be used. This basin can be made any size by putting more blocks to the circle. Initial cost is about the same as brick, but there is a great saving in time in construction as each block displaces 13½ bricks, as there is no plastering to be done, as with a brick catch basin, there is considerable saving in cement. One other economical feature is that this basin will never rot out as do brick catch basins. These basins are delivered to any part of the city with sewer pipe orders.

Hayden Ringer of Ringer Bros., who operate a successful builders' supply yard opposite Cheltenham Depot in South Chicago, said: "We are more busy than we have been at any time this season. We had to hire five extra teams last week to deliver material to jobs around here promptly. We have secured contracts for furnishing material for paving Ontario street from Seventy-ninth to Eighty-sixth street. We are also furnishing material for foundations and doing much work excavating. Prospects for fall are bright."

IOWA RETAILERS.

Des Moines, Ia., Sept. 20.—The Farmers' Grain Company, of Granger, has been formed to deal in lumber, tile, and cement as well as brick. The officers are: President, John Sharrin; vice-president, J. P. Hickey; secretary, John Manning, and treasurer, H. A. McCahill.

The Builders' Lime and Cement Company, of Davenport, secured several good municipal contracts for material in that city in competitive bids.

The retail yard of William A. Becker, Monroe, Wis., was destroyed by fire September 5, causing loss of $20,000, with about $12,000 insurance.

The Kansas Cement and Material Company of Kansas, which has a capital stock of $50,000, has been empowered to do business in Kansas City, Mo., with a state capital of $25,000.

The Cosler Construction Company, of Minneapolis, has been incorporated with a capital stock of $10,000, to do a contracting business and deal in building material. The incorporators are Albert L. Cosler, Howard A. Cosler, and Mildred H. Cosler.

RINGER BROS. BUILDERS' SUPPLY YARD, OPPOSITE CHITTENHAM DEPOT, SOUTH CHICAGO.

NEW YORK RETAILERS.

New York, N. Y., Sept. 18.—A moderate demand for building materials was noted in the local market during the interval. Dealers reported that business had showed some improvement over last month and from present indications, look for a general improvement during the balance of the year. Prices have been well maintained. z

Walter C. Shultz, of C. S. Shultz & Company, Hoboken, N. J., dealers in masons' materials, said: "The demand for building materials here was of a good character during the past month, and the volume of business for the year shows improvement over last year. The outlook for a good amount of business during the balance of the year is very bright."

E. B. Morse, of the Frank E. Morse Company, stated: "The demand for building materials was of a good character during the past month and a marked improvement was noted over the previous month. The price of cement was advanced 10 cents and we are quoting 80 cents, in bulk, at mill. The call for cement was good, and lime continued to move freely. Wall plaster and other materials are in good demand. At this season of the year business commences to pick up and we are of the opinion that it will continue to improve as the fall season progresses. Dealers with whom I have spoken report that the prospects are bright for a good amount of business to come across during the fall months."

SAN FRANCISCO RETAILERS.

San Francisco, Sept. 17.—Retailers are well satisfied with the present volume of business in all lines of building material, and reports from most parts of the country indicate more activity than last year, though the movement in the small trade is hardly as active as it was early in the summer. This is due to the general centering of attention on the movement of the crops through the country, the harvest season preventing much progress on small construction work. Large projects, such as dams and bridges, however, are going ahead rapidly, and some good sized material contracts have been placed for such work. Irrigation work also is helping the market, the present dry year having emphasized the importance of permanent irrigation works and the prevention of loss of water by seepage. In another month, when the crops are out of the way, country dealers look for a very heavy movement.

Business in the cities was less active in August than in July, though contracts now being let promise well for this month. In San Francisco building permits were only $1,950,502, compared with $2,452,725 for July, and some decrease is noted in all other Coast cities, though Los Angeles remains in the lead with a valuation of $3,212,007.

The outlook for large buildings here is unusually good. Plans for the new city hall will probably be ready for figures within 60 days, and the United States sub-treasury contract should be let about the same time. Contracts are being let for the St. Francis Hotel annex, and the Insurance Exchange building, a large office structure, is being figured. In addition to the municipal auditorium on the civic center site, an opera house is to be built by local musical societies.

MILWAUKEE RETAILERS.

Milwaukee, Wis., Sept. 18.—Building operations in this city continue at full blast, according to figures disclosed at the office of the building inspector. Retailers have naturally been meeting with an especially fine business this season, while the prospects for a big fall trade are bright. During the month of August 418 building permits were issued for structures, representing a value of $1,011,400.

Figures for the year are far ahead of those of 1911. At the close of August the books of the building inspector showed that for the first eight months of the year 2,602 permits were approved for structures representing an investment of $11,026,429, more than an average of $1,000,000 per month, a new high record for Milwaukee. During the same period in 1911, the value of permits issued totalled only $822,713.

"Demand for general lines of building material has been especially brisk this summer," said Augustus F. Hinners, president and treasurer of the Hinners Lime & Supply Company, 421 Third street. "A record amount of building is being carried on and the prospects are that operations will show no abatement this fall. Collections are much more satisfactory than a year ago. The bumper crop which has been harvested in the northwest has done much to increase business and create confidence."

PITTSBURGH RETAILERS.

Pittsburgh, Pa., Sept. 18, 1912.—Last month was a very busy one for most of the retail yards in Greater Pittsburgh. In the sale of building supplies there was a marked increase over previous months of the summer. Considerable new building was started in the suburbs and the spring building was along to a point where lath, slate, etc., were sold in large quantities. Cement was probably the best seller in the market. In spite of the frequent raises in prices there is still a good, strong demand for all grades of cement. The public works are taking an enormous amount of cement and concrete for construction work and some improvements like the removal of the hump have really only commenced to purchase these commodities. Contractors throughout the city say that it has not been so hard to get labor and teams for years as at present. Five and one-half and six dollars per day is being paid for teams, and as high as thirty cents an hour for ordinary street labor. The supply of unskilled labor in every line here is remarkably short.

Retailers look for quite a good deal of fall building which will add considerably to their sales and believe they will be able to get a better price for supplies than in the spring. Stocks are not increasing any and with the fine weather now on hand all operations are coming forward very satisfactorily. All contract work was greatly hindered last month by the frequent and very heavy rains which made washouts of almost daily occurrence and made grading practically impossible.

Burgettstown, Pa., has just let the contract to Rinehart Brothers, of East Liverpool, Ohio, for paving Main street and Center avenue.

The American Conduit & Manufacturing Company, of New Kensington, Pa., which has built up an international reputation during the past ten years, has outgrown its site and will probably be forced to purchase another location outside New Kensington for a larger plant.

D. W. Challis & Co., of Sewickley, an Ohio river suburb of Pittsburgh, was lucky in securing the contract for the state road on Sewickley Heights and Edgeworth Borough, and will begin work at once.

The Prosser Construction Company, of Carnegie, Pa., one of the liveliest concerns in Allegheny county, has secured the contract for paving Pike street at Houston, Pa., near this city.

The following contracts were recently awarded by State Highway Commissioner E. M. Bigelow for work in western Pennsylvania: Bradford county, Borough of Towanda, Blaisdell & Sheldon of Punxsutawney; Fayette county, Lower Tyrone township, Wyoming Valley Construction Company, West Nanticoke; Washington county, South Strabane township, Samuel Gamble, Carnegie; McKean county, Liberty township, John Ryan & Co., Coudersport; Erie county, Mill Creek township, Meyer Brothers Construction Company, Erie; Columbiana county, Catawissa borough, J. S. Caldwell, Trenton, N. J.; Susquehanna county, Latrobe State road route No. 9, T. S. Newman, Athens; Lycoming county, Clinton and Muncy Creek townships, State road route No. 240, Busch & Stewart, Williamsport; York county, York township, State road route No. 216, the Juniata Company, Philadelphia.

Pittsburgh is wrestling with a $10,000,000 bond issue which will likely be voted on this fall. City council have resumed their sessions and are now considering the different items for this bond issue. These as proposed include $940,000 for the proposed sea wall along the river fronts; $420,000 for eliminating grade crossings; $1,230,000 for city hall; $900,000 for a wharf and dock improvements; $300,000 for market house in Diamond Square and $150,000 more for the North Side market house; $329,000 for a highway up the face of Coal Hill; $122,000 for widening of Arlington avenue, besides a big sum for ordinary street improvements. If this bond issue goes through, as it is likely to do, it will assure the largest amount of contract work for Pittsburgh during the past two years that this or any other Pennsylvania city ever had on hand. It must be remembered that the previous bond issue of $7,000,000 for city improvement has hardly been started upon with the exception of the hump cut.

County commissioners have about decided on the location of the two South Side tunnels. One will be driven through the hill at a point 300 feet north of the Point bridge, the south end to be in Shalersville. This will be one-half mile long and will cost $500,000. The other will extend from South First street and Carson streets to Warrington avenue, and will cost $1,000,000. Work on the improvements is to be started soon.

Director Joseph G. Armstrong of the Department of Public Works is taking bids for a big relief sewer for the Thirty-third street draining basin to cost $116,000. This is $50,000 more than the original cost as contemplated by councils.

LOUISVILLE RETAILERS.

Louisville, Ky., Sept. 18.—Retail building supply men of Louisville, after a summer the business of which came well up to normal, are beginning to experience a marked increase in trade, as expected. The situation at present is in gratifying shape, according to the belief of the majority of the supply men. Fall trade is opening up as well as could be wished by the most exacting, and there is no reason to predict other than a fine business, all conditions pointing in that direction.

While the number of new buildings which are being erected in the vicinity of this city is a sign post which points to prosperity for the retail supply men, other factors also are assisting in contributing to the general prosperity. The past summer has been remarkable in some respects. Showers have been frequent throughout the state, and the past few months are in a class by themselves in this regard. The rains have had a bad effect on roofs, making repairs urgent in many cases. The general rains, which affected some lines of business unfavorably, have stimulated the roofing trade, and that line is now in the midst of a business boom.

The Louisville Roofing & Supply Company is contemplating improvements in its plant, and will probably determine the exact nature in the very near future. Officers of the company are anxious to keep the business as up-to-date as possible in every regard. Work on a handsome new apartment house at Fourth and Breckenridge streets, which was one of the important contracts secured during the past summer, has practically been completed, only the finishing touches remaining to be put on. The company is bidding on other work of value, and expects to land a number of handsome contracts in the immediate future.

The Culley Cement Block Company is one of the local concerns which took advantage of the Kentucky State Fair to obtain a little publicity for its lines. The general public is woefully ignorant of the fundamentals of the business, and John S. Culley, head of the company, installed an attractive exhibit at the State Fair grounds, devoting his personal attention to the display of columns and similar lines. The expenditure of time and money was distinctly worth while, according to Mr. Culley, who expects returns in the way of added business during the coming winter.

The Samuel F. Troxell Company is now engaged on the water-proofing and paving of the new bridge which has almost been completed by the Kentucky & Indiana Terminal Railroad Company, linking the two states with a steel path. The contract is one of the most valuable secured during the past year, and is considered quite a distinction as well as a profitable piece of work by the Troxell company. The same concern will shortly re-roof the big warehouse of the American Tobacco Company at Eighth and Breckenridge streets. The job will amount to about 150 squares. These two contracts alone will insure the activity of the Troxell company in the local field for the next few months. Several repair gangs are now at work in various parts of the city, and that phase of the business is netting profitable results.

Owen Tyler, one of the leading retail building supply men of the Kentucky metropolis, has practically completed work on the new Louisville City Hospital, the new million-dollar institution which is going up at Preston and Chestnut streets. Of the contract calling for the delivery of a million and a half brick as required, Mr. Tyler has provided 1,000,000. He is delivering the remainder at the rate of ten carloads weekly, and the order will have been filled in its entirety in a comparatively short time. The contract is said to have been the largest individual one ever handled in the vicinity of Louisville, and the supply man is justly proud of having filled it satisfactorily. Face brick were used exclusively. Mr. Tyler recently closed a contract for the new residence of Samuel Henning, a local broker, the paper involving the delivery of 50,000 hydraulic pressed brick, Shade No. 503. He recently secured the exclusive agency for western and central Kentucky for the A. C. Horn Company, of New York, and the Louisville concern will boost the cement lines in those parts of the state. A recent and important addition to the selling force of the local concern is Leo M. Parsons. Until recently, Mr. Parsons was in the lumber business in Louisville, and in that connection became intimately connected with dozens of individuals who may be considered good prospects in his new line.

The Central Paint & Roofing Company attracted the attention of visitors to the Kentucky State Fair by its complete exhibit or roofing lines. The display of the Central was under the personal care of L. M. Rice, Jr., assisted by a staff of salesmen.

HEART TO HEART TALKS

By An Observer.

ARE YOUR BRAIN CELLS IN ORDER?

As the years roll on there are safety appliances put on nearly everything. There are hundreds of men studying all the time to make travel on the railroads more secure, and it has been made more secure not only for the traveler, but for the railroad men.

One of the most valuable inventions in this line is the air brake, and another, the self-coupler.

Twenty years ago a freight brakeman with a full set of fingers was a novelty, and today we see the results of the old-time hand coupling in the many passenger conductors who have been maimed while running freight.

A few years ago some one dropped on to the fact that many people have imperfect eyesight. It is said that the majority of people cannot distinguish color. Today every man before he runs as an engineer or fireman on the railroad must have his sight examined, and when we ride in comfortable Pullmans we have the satisfaction of knowing that the engineer in charge can tell a red light from a white or green one.

Still there are accidents, most likely on account of the fact that no scheme has been devised whereby we may examine a man's brain to see if all the cells are in order and are performing their proper functions.

For some of us it may be just as well that the scientists have found no way to make us live up to this standard, as we might find out how imperfect we all are.

One thing has already been admitted; that it has been several centuries since a perfect man has been seen. God may have intended man to be perfect, and possibly it is man himself who has in some way gotten away from the standard and it is up to the individual to see that all of his brain cells are in working condition.

There is an old story of a prosperous business man who bought himself a home in one of the suburbs of the city where he resided. He had been successful in business; successful in his matrimonial venture, and was generally considered above the average in intelligence.

One day he discovered that a limb on one of the trees in front of his home was so low that it obstructed his view. He at once hunted up a saw, climbed the tree, sat on the limb and sawed it off—coming down to the ground with it.

Some people might say that he was thoughtless, but that hardly expresses it as well as to say that the particular brain cell that had to do with trimming trees was out of order.

Some have been so bold as to say that we are all insane, and that we differ only as to the degree. However, I am willing that every man should be his own judge as to that. There is one thing sure, we are not always the same, and we sometimes surprise ourselves with our inability to cope with certain conditions that we have had no trouble with before.

In hiring men for any service too much care cannot be taken, for the reason that however bright the man that is doing the hiring may be, he has not the faculty of examining the brain as the oculist has the eye.

To a layman one of the greatest farces there is is expert testimony as to a man's sanity.

Man, left to himself, usually finds his own level, and employers of labor are sure to be on the watch for men who are ambitious, and who show that they have a determination to get on in the world.

We are apt to expect too much of people in the so-called lower walks of life who are willing to stay in the first position they happen to strike without making the least exertion for an advance.

Standing on the fifth floor of a skyscraper one day I was amused to notice how it worried a man who was also waiting to take an elevator going down, because two cars had gone past us without stopping. He said to me, "Those damned elevator men have no brains."

"If they had," said I, they would not be running elevators."

"Perhaps not," said he, and he pushed the down button again.

Still, many a good man has started in to work at running an elevator, but they did not stay at it. I have in mind now a president of a bank and two lawyers who began their life work running elevators, but their brain cells were in good order.

I have been told that General Funston was a street car conductor in Kansas City, but his brain action since has proven beyond a doubt that when he did collect fares he did not miss any.

Men in the so-called common walks of life are not always the slow thinkers. One day on the Dearborn elevated station in Chicago, while waiting to go to my home on the south side, five loaded south side trains passed the station without stopping. A well dressed and very pompous appearing man was condemning the management of the road in very artistic language.

He seemed to wish a little sympathy, and after a time addressed his conversation to me. When the time came for me to answer one of his remarks, or, at least when he stopped for want of breath and seemed to expect an answer, I said to him:

"Did it ever occur to you that the railroad company or its manager is not to blame because everybody wants to go home between five and six o'clock?"

He looked at me in astonishment, and as he did not speak, I continued:

"If you will come here any afternoon, about three o'clock, we will supply you with a double seat and accord you all the courtesy possible."

I guess that was a little raw, for I did not own a spike in the road and was never in the employ of a street railroad company, but it afforded me some amusement and, perhaps, straightened out one of the cells in this man's brain. But men like this have always made me have more consideration for the men who are doing the work.

SAT ON A LIMB AND SAWED IT OFF.

Accidents, we are told, are many times due to carelessness. But who knows the condition of the brain of the man who we have adjudged careless? And who knows but we, who are more or less inclined to be egoists, might do worse under the same circumstances?

Coming up from New Orleans one trip, the train stopped at a station about fifty miles south of Memphis. Just as the engineer was pulling out of the station a passenger who seemingly had the weight of the world on his shoulders, saw a woman trying to board the last car. He grabbed a cord and gave it a pull. It was the air-brake. The train stopped. The woman got on; but the engineer had pulled out two drawbars and we were obliged to lay by three hours for repairs, which was long enough for several of us to miss our connections at Memphis.

When the conductor came back to find out who set the air-brake, strange to say, that particular cell in the man's brain was not working and the conductor failed to find out.

One of the easiest things to do is to run a railroad. I have sat in a Pullman smoker and heard about it many a time from men who had had experience—in riding on cars. They always remind me of the Southern boy who came to New York to make his fortune. He spent all of his money before he thought to look for a situation, and the first place he applied was a wholesale shoe house. The young man had answered an advertisement of this house for a traveling salesman.

"What do you know about shoes?" was the first question the sales manager asked him.

"Shoes," repeated the young man, "shoes; why I have wo'n shoes since I wus fo'teen yeahs ol'."

A SOURCE OF REVENUE.

The late Rear Admiral D. D. Porter was firmly convinced of many things, one of which was that strict discipline and plenty of work made satisfied men, and any man who has had so long an experience in either army or navy will tell you that when the men had plenty to do, and were compelled to obey orders without question, everything went very much more smoothly than when governed by a lax hand.

This rule will apply equally well in business. When you hire a man give him to understand that you hire him to work, and that he must begin on time each day, and you will avoid trouble for the man and for yourself.

There are very few dealers in building material who can keep all of their men at work all of the time in taking in, and delivering material for the reason that the supply does not come in regularly, neither does the demand for material continue steadily.

Go into a building material yard, a coal yard, a lumber yard, or a place where all of these articles are kept for sale, and you will find that there is a good deal of time wasted.

Time wasted is a loss to someone. In this case it is the employer who is the loser, and he loses in more than the actual time lost. He loses by reason of the fact that the man who only works a part of the time does not put his whole mind into his work the rest of the time. There is an old saying which reads: "If you want anything done that you cannot do yourself, give it to a busy man, he will attend to it. The man who has plenty of time on his hands usually thinks but little of time."

The next thing for the employer to think about is a remedy for all this, and there is a remedy, and one that will work as a combined remedy and advertising proposition. You are selling tile, brick, cement, etc. You would have orders for cement blocks and building blocks if you had them. Why not invest a little money in machinery and make these things yourself when the men have nothing else to do? It would not only keep the men busy but it would be a source of revenue.

The advertising that is brought about by doing these things is another advantage that can hardly be calculated. You will seldom find a customer who is not interested in machinery, especially machinery that makes something he is interested in, some because they understand something about mechanics and want to understand the workings of the machines, and others because they do not understand machinery and they like to watch it, for the reason that to them it is one of the mysterious productions of the age.

The advertising part of this business should be worked to the limit. Let everyone know what you are doing, and when they come to the yard invite them to see how it is done, and everyone you show it to will tell at least five others. The direct help, however, is due to the fact that you are keeping the men at work, and their industry is making more valuable men of them. Add to this that you are making from the raw material tiling, cement brick and building blocks that have only cost you the value of the raw material, and the interest on the money invested in the machines and you will show a good increase in surplus at the end of the year.

Perhaps it never occurred to you but there are thousands of men working all the time on labor saving ideas. When you take this into consideration is it not worth while to keep the men you are paying by the week, or by the month, busy? There is always a market for tiling. The increase in quantity of tile used each year would surprise you. A knowledge that you are making cement blocks will cause men to inquire as to the cost, and what advantage they have over anything else for building. The manufacture of all these articles is a good subject for conversation, and if you can get any article talked about it will find buyers.

There is still another chance to help yourself on account of doing this kind of manufacturing on your own premises. Customers are quick to see the advantage you have in making your own goods. They figure they are buying them at first hand, and in these days of people desiring to buy direct from the manufacturer it is a big point in your favor.

Labor is the great expense in all business. If not directly it is indirectly, therefore, in order to reduce your running expenses make all of your labor producing labor.

There are other lines of work that can be followed to advantage in this same way, and with the same help. One thing is cement fence posts. Cement fence posts will outlast any wooden post that ever grew because it will stay as long as the ground stays to hold it up. Of course, you can drive against it and break it, but you can break a wooden telegraph pole in the same way.

The making of silos is a business of itself, but it can be worked by the dealer in the same manner as the making of the other things. However, in case of silos the dealer would need to go into the contracting business, but it would pay. It would require lots of attention but no one ever made much out of his business without attending to it.

THE LESSON OF BACK SETS.

If it were possible to line up all of the successful business men in the country and ask them whether they ever had a serious back set in their business experience it is more than likely that the greater number would answer in the affirmative. Not only would they answer in the affirmative, but they would be likely to add that the experience was what really put them on the road to success.

It is seldom that a man makes an interrupted march of progress. When such a thing occurs it is usually the result of superior endowment in business sagacity, combined with other fortunate circumstances and surroundings. Most men, however, do not have these unusually favorable conditions to carry them along and are obliged to make their way against obstacles of one kind and another that tax their best efforts. In carrying on a business under these conditions it often happens that a man, through being over-zealous, or through mistaken judgment, and in some instances through lack of proper caution, experiences a back set that either completely carries him off his feet or retards his progress.

In most cases the back set teaches a valuable lesson, and the man who sees the lesson such an experience teaches, and takes advantage of it, emerges a better man than he was before. He retains all of his former ability and has the newly acquired knowledge as well.

It is through the lack of some necessary quality or faculty that these experiences come. Something has been overlooked, or faulty judgment used in carrying on the business, and the business suffered as a result of the omission or mistake. It is after a man has experienced a back set, and having discovered where the mistake was made, that he is not likely to make the same mistake a second time, and is therefore better prepared to proceed toward the goal of success.

GETTING OUT OF THE BEATEN PATH.

Some good arguments are brought in favor of a man following the beaten path in business, but the man who keeps strictly within its narrow confines misses his opportunity of exploiting new ideas and introducing new methods. These are things that give a man an advantage over those in a similar line of business who content themselves with old established methods and the limitations that accompany them.

There is always the danger of the beaten path becoming a rut, and when it does it makes hard travelling for the larger number who, through timidity or lack of initiative, hesitate about leaving it.

It is to the courageous men, whose ambition and progressive ideas take them out of the beaten path, that credit is due for the improved methods in merchandising and manufacturing known as the evolution of business. In order to bring these things about it is not necessary to depart entirely from the old methods, or from what is here termed the beaten path. It is not even desirable to do so, except, possibly, in isolated cases where some invention or discovery revolutionizes the old methods. But it is desirable many times to get far enough out of the beaten path to exploit new ideas of a nature calculated to improve the old ones, for in new ideas, and new methods, lies the hope of success beyond the ordinary.

Take the possibilities out of business and you have a monotonous grind, and when such a condition obtains for any length of time there is very apt to be retrogression in a business rather than progress. There is danger of its "going to seed."

In order to be up-to-date in his business a man must be constantly devising something new in the manner of conducting it. He should not be satisfied with old methods because there are too many others who follow them. Getting out of the beaten path is equivalent to being initiative and original, and the men who have these qualities, and are willing to incur a reasonable amount of risk in putting them into practice, are the ones who keep to the front and usually realize the most for their efforts.

AVOID ARGUMENT.

The coincidence of two well-known Chicago business men making practically the same remark when recently speaking on the subject of salesmanship calls attention to a fault too often found in the ranks of those who sell, or attempt to sell, goods.

The remark was to the effect that all argument should be avoided in dealing with a customer. Both speakers took the position that it is the better way to let the customer have any difference of opinion largely his own way at the beginning, but that the salesman should gradually bring him around to his own way of thinking by adroitly leading him on, a little at a time, until he is in accord, or practically in accord, with him.

It is to the credit of a great many men in business that they exercise their ability to handle customers in this manner, but the fact of two such prominent merchants calling especial attention to the matter indicates that there are a good many engaged in selling goods whose efficiency as sales-

WHEN A MAN BECOMES ANGRY HE LOSES HIS BETTER JUDGMENT.

men are materially lessened by entering into arguments with their customers.

Perhaps the most effectual way to drive this point home is to caution a salesman against antagonizing the ideas expressed by the customer. to acquaint the customer with the merits of the article or goods in question, but this should be done without argument that takes the form of antagonizing the ideas expressed by the customer. We all know that when we are antagonized it makes us more or less resentful, and a person who feels resentful is not in a mood to favor the one who has caused him to feel that way.

It requires patience many times to put up with the whims and unreasonableness of certain customers, and the impulse is to argue or antagonize them, but "business is business," and it can only be successfully carried on by observing the laws and principles on which it is founded.

Differences of opinion frequently come up between a salesman and his customer. It is natural that they should. But when they do come up the practical salesman does not permit himself to be drawn into an argument, or in any way antagonize the one he is dealing with. He practices the art of gradually bringing the customer around to his way of thinking, and when he has accomplished this the sale is as good as made. And as sales are the object to be attained it is important to use every legitimate effort to bring them about, avoiding everything that might stand in the way of accomplishing them.

DIPLOMACY.

The hasty word, spoken or written, has cost a pretty sum to those who have failed to control their temper. When exasperated by some of the innumerable things that keep coming up in business to harass one it often occurs that words are used which are regretted after it is too late to recall them. The most effectual way to impress upon the minds of such people the folly of giving way to their angry passions in business is to show them the pecuniary loss that in the majority of cases is pretty sure to follow.

Temper, which implies calmness of mind, moderation and equanimity, is a most necessary attribute, and the more a man has of it the better he is off, provided he also has the power of control. Control is absolutely necessary to lasting success. It is a leading characteristic in diplomats, and diplomacy is a great asset in business.

When a man becomes angry he loses his better judgment and says or writes things that prove harmful to his interests. In business it frequently costs him money. The harshly spoken word is gone beyond recall, although an apology sometimes counteracts the harmful effects of a first offense. But apologies are, in themselves, a confession of error, and the occasion for making them should be avoided.

The harshly written word is equally, if not more, harmful than the harshly spoken one, but it is possible to guard against the harmful effects of the harshly written word by laying aside for the time being any letter or communication in which it has been used. If this custom is followed, many a letter written in anger will be destroyed the next day, if not within a few hours, after it has been written, according to the intensity of a man's feelings and the time it takes him to cool off.

It is a good thing for a man to get mad occasionally if he has the power of controlling his temper. A noted public man, prominent in reform and philanthropic movements in New York, said sometime ago, in speaking of the deplorable conditions in municipal affairs in that city, that what was needed was for the people to "get mad and stay mad." It was necessary for the people to become aroused and determined, in putting down the abuses that were being practiced upon them by those in authority. He was right, but he did not mean that the people should become angry in the sense that they should rave or become furious.

A man may and usually does have perplexities and annoyances in connection with his business that rile him to the point of anger. If he loses his temper under such conditions and says or writes things that make it apparent that he is exasperated and resentful, it very often is the means of his losing custom and lost custom means lost profits.

Judgment and control are required under such circumstances. There are, of course, cases where a customer has taken, or tries to take, unfair or even dishonest advantage, and in such cases a vigorous but dignified response is demanded and should be made. It is seldom, however, that a heated, angry response is justified.

The man who controls his temper under all circumstances is the best diplomat and, granting that he is endowed with other requisites, the best diplomat is the best business man.

ODDS AND ENDS.

Any business, of a character that involves carrying a stock of goods, that does not have at times an accumulation of odds and ends is to be congratulated. This applies equally to store, factory, yard, mill, and in fact every place of business where goods of any kind are kept on hand.

It is a pretty safe assertion that practically every business of the character named does have accumulations of odds and ends more or less of the time and it becomes a matter of considerable importance, and requires close study and attention to keep such accumulations down as much as possible. Proper attention will eliminate the evil, and it is an evil, to a large extent.

Odds and ends accumulate in some places where they would least be expected and many times the principal reason why they accumulate is that the individual, or firm, in whose business the condition develops is in easy financial circumstances and these things are not watched as closely as they might be.

From a strictly financial point of view such people can carry a load of this kind indefinitely, but it is not good business policy for any merchant, however fortunate he may be as to his financial circumstances, to do so, and to the concern working on limited capital it is disastrous to let these accumulations creep in.

ECONOMICAL SAND AND GRAVEL PLANT

The enlargement of the uses of reinforced concrete construction and of plain concrete has so greatly increased the demand for sand and gravel that large modern handling plants are required.

In the East it has not been customary for many years to base the value of any new improvement or article on its first cost; but in the West, where conditions are different, buyers have been prone to consider the first cost of prime importance and have built and bought largely on price. This may have been good policy at one time, when a man bought an article or built a structure with the idea of reaping a rich harvest in a short time and then moving on to some new place. Such conditions are largely due to the migratory population of the West, the desire to move on to new and unsettled parts, and the hope of getting rich quickly by taking the cream and leaving the skimmed milk for those that follow. Today these conditions are gradually changing and those who handle the skimmed milk in an economic and scientific manner are reaping rich harvests.

To handle sand and gravel no special knowledge was required, the object then being merely to build some sort of a box which would hold a few wagon loads. The idea of employing an engineer to study and solve the problems was absurd, as there were no problems to be solved. All that was required was to get a few men and some boards and build what was wanted. In fact they often dispensed with even this much by shoveling the material from the bank into the wagons by hand. No one thought of using washed sand or gravel. Timber was plentiful in this country and lumber was the main article in building construction. The rapid increase in population and the desire to build more permanently has tremendously increased the demand for clean sand and gravel.

Many of the manufacturing plants and machinery houses, in their great anxiety to increase sales, would offer to design entire plants gratis, provided certain machinery were purchased from them. Their machinery may or may not have been best adapted to meet the requirements of the particular case. The buyer, thinking to get something for nothing, and having no special knowledge of the scientific questions involved, and the salesman thinking only of that particular case, would generally between them get most unsatisfactory results. The buyer of course blamed the machinery and the salesman had an unsatisfied customer, and peculiar as it may seem, neither side could see the wisdom in employing special talent to study the matter.

The machinery often did exactly as the manufacturer guaranteed, so the buyer had no other resource except to shoulder his troubles. The difficulty lay in the fact that neither man had sufficiently keen vision to see all the larger problems involved and to logically deduce correct conclusions therefrom.

Conservative men are today beginning to see the wisdom of employing specialists in each line to solve the problems of economic building and operating.

In designing a plant for any particular use the engineer must take into consideration the peculiarly local conditions governing that situation and must study these carefully and assemble them all logically in his mind before beginning. It won't do to says afterwards, "I forgot that."

When the writer was engaged by the Ritchie Contracting & Supply Company, of Vancouver, B. C., as consulting engineer, there were numerous traditional practices to be overcome. When calling for bids under carefully thought out plans and specifications, he was told by a young graduate engineer, representing a large manufacturing establishment, that "unless he conformed more nearly to modern practice his firm declined to bid."

The property selected was a long, narrow strip of land on the north shore of False creek, just west of Granville street. The property was excellently situated in regards to delivering material, being close to the heart of the best business and residence section, where large quantities of building material were being used. The foreshore was eighteen to twenty feet lower than the street level and the tide had a rise and fall of fourteen feet.

In order not to be obliged to lift the material any higher than necessary, it was decided to establish the dock level just above the maximum high water, and this required that an easy grade be provided to get the loaded teams to the street level. A grade of about 4 per cent was secured. The property was 100 feet wide by 248 feet on its longest side. The B. C. Electric railway has a branch line running along the back of the property at an angle of 71 degrees 15 minutes with the property line.

The problem of getting the material into the bunkers had to be considered in connection with the problem of getting it out with the least possible delay to teams loading and loaded. Mr. Ritchie desired also to utilize as much of the property as possible for warehouses for the storage of other building materials, such as lime, cement, plaster, etc. He wanted to have built a system which could later on be increased without interfering in any way with the original plant.

For these reasons long, narrow bunkers, with chutes on both sides for loading wagons, was decided upon. In order to prevent a congestion of traffic it was decided to keep all the wagons moving in the same direction, so the empty wagons are brought down a rather steep grade just east of the old Granville street bridge to the level of the foreshore. They pass under the old bridge and under the "out drive," pass by the shipper's office to get their tickets and then onto the driveway on the west side of the bunkers, between the bunkers and the warehouses, shown in above cut. This figure also shows the method of loading wagons described later. They then pass around the front of the bunkers to the west side, where they strike the grade that lands them on the old bridge at the street level. Between the bridge and the Ritchie property is a space of 75 feet, 50 feet of which is occupied by a contractor, and it was impossible to interfere with his operations. The wagons can be loaded on either side of the bunkers, as conditions of traffic warrant. Any heavy trucks coming into the warehouses with loads can, by a slightly longer road and easier grade, get on the "in drive" with the regular traffic. Most of the material for the warehouses comes either by water or rail and is now unloaded directly.

It was at first determined to build a small 600-yard bunker, but soon after that was finished the demands of the trade were such that it became necessary to increase the capacity to 800 yards by adding some cribbing on the top.

In determining the type of bunkers and the method of unloading many points had to be taken into consideration. First was the character and topography of the ground. Second, the contemplated increase in the size of the plant without interruption to existing operations at the time of enlarging. Third, provision of ample roadways for handling the increased traffic with the least congestion. This involved having the traffic move in the same direction. Fourth, the grade up which this traffic had to be moved to the street level. Fifth, the problem of getting scows to and from the bunkers and storing them without encroaching on the channel fairway. Scows can only come in and out at high tide on account of the shallowness of the channel.

The conditions of traffic largely determined the type of bunker. On account of the grade it was not feasible to use the flat bottom, elevator construction bunker, with wagons driving underneath to receive their loads from above. This type is cheaper to construct, but it had the disadvantage of not adapting itself to the future contemplated uses and increase. Any type of bunker which involves the stopping and backing of wagons into stalls to receive their loads could not be considered here. Hence it was decided by the process of elimination to adopt the type of bunker with outwardly slooping bottom, which type permits the wagons to drive along either side and stop without interfering with the traffic, and receive their loads by means of hinged chutes and suitable gates.

By the same process the type of unloading apparatus was determined. Probably the simplest and least expensive of all to operate is the inclined railway, which has cars that run under hopper bottom scows to receive their loads and are then hauled up the incline by means of a hoisting engine having a direct pull on the cables, with long, easy bends. This is the easiest on the cables, requires less men to operate, has a cheaper and simpler hoisting rig and cleans the scows to better advantage. It has the disadvantage of no flexibility and limits the plant to large and expensive specially constructed scows, so that in an emergency the company could not go into the market and buy material on board any available kind of scow. These heavy scows are also dangerous and hard to tow in a seaway. In order to get into False creek the scows have to cross English bay, which body of water is apt to be quite rough, and this might delay the arrival of material at a time when most needed. This system was not adapted to this particular piece of property.

Another type is that employing a stiff leg derrick with a swinging boom. In some cases the derrick is mounted on the dock level alongside the bunkers and is either stationary or moves on a runway. In others it is mounted on top of the bunkers and may be stationary or travel lengthwise of the bunkers. In still others it is mounted on a level between the dock and the top of the bunkers and may be stationary or travel between two sets of bins or alongside of one. Where it is stationary between the dock and the top of the bunkers, the material must be delivered into a hopper, from which it is taken by some form of conveyor and lifted the rest of the way. Usually some special condition determines the use of one of these forms, but there were no such conditions in this case in favor of adopting one of these types, while there were several against doing so.

On account of the desire to utilize every inch of ground space to the best advantage, it was out of the question to mount the derrick on the dock level. For the same reason it was not feasible to unload scows along the sides of the property, and this eliminated the traveling derrick. Scows must be unloaded from the end of the dock, and this required a stationary apparatus of some kind. The choice lay between a swinging boom derrick and a fixed horizontal boom. The latter was finally determined on as the more economical and satisfactory under existing conditions.

In front of the bunkers and over the space used by the teams in going around from the in to the out drive, a heavy tower was built 30 feet wide (same width as bunkers) by 20 feet deep and 62 feet from the dock level to the bottom of the boom. On top of this tower was built an "A" frame, from which was suspended, by hog roads, a boom, on which ran the trolley carrying the bucket in and out of the tower. All strains were carefully calculated and analyzed and by means of heavy tie rods and struts were carried down to the foundations.

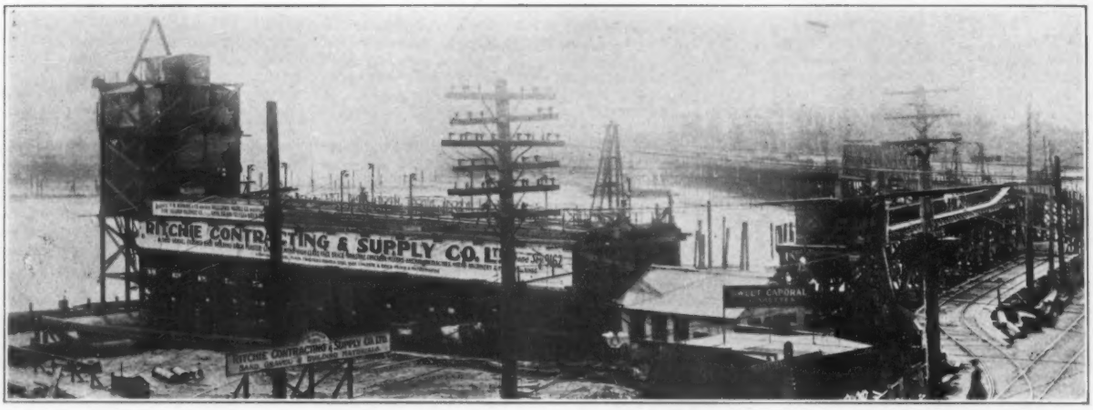
The boom projects 32 feet beyond the face of the tower and is composed of two 8 by 16 timbers, 60 feet long, bolted together and reinforced with steel plates. The trolley is operated along this boom by the difference in tension on the two bucket lines. The closing line tends constantly to haul it in while the holding line tends to haul it out.

The trolley has a line from the rear passing directly to the inner end of the boom, thence over a large sheave and down to a grooved drum to which it is fastened. From the front of the trolley a line passes to the outer end of the boom, over a large sheave and back to the inner end of the boom and thence down to the same drum, but on the opposite side. When the trolley moves the line winds up on one side and unwinds on the other.

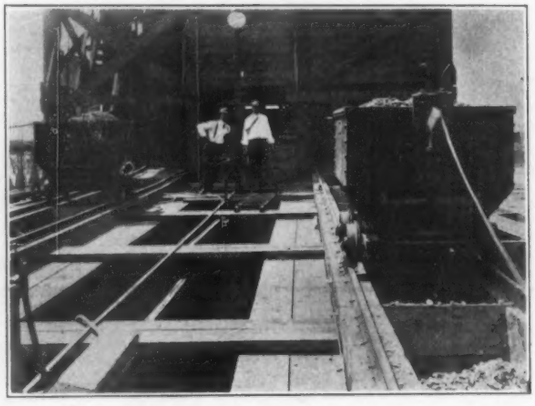
This drum has a brake operated by a foot lever, which is constantly in tension and holds the trolley rigidly in place.

The closing line of the bucket, the one which carries the loaded bucket, passes over a large sheave in the trolley, and thence directly back to the inner end of the boom, then over a sheave and down to its winding drum. The holding line, which lowers the empty bucket, passes over a large sheave in the trolley, thence over a sheave at the outer end of the boom, then back to the inner end, over another sheave and down to its winding drum.

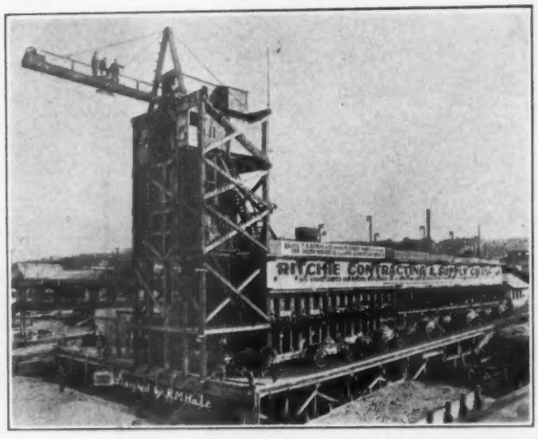
By pressing down on the foot lever the operator releases the brake on the drum holding the trolley lines, and by increasing the tension on closing or holding line can move the bucket in any desired direction and at any required speed. The trolley drum has no friction and the brake is put on largely as a matter of precaution. The bucket can be operated with the holding and closing lines, merely requiring more skill on the part of the operator. To dump the bucket the operator removes his foot from the brake and the trolley stops. He then throws out the friction on the closing line and throws in the friction on the holding line. As soon as the bucket is empty he continues winding on the holding line and presses the foot brake. This releases the trolley and it runs out along the boom to the desired position. He then releases the holding line friction and lowers the bucket. He catches it with the brake on the holding line. To hoist he releases the holding line brake and throws in closing line friction.



SAND AND GRAVEL BANKERS AT VANCOUVER, B. C.

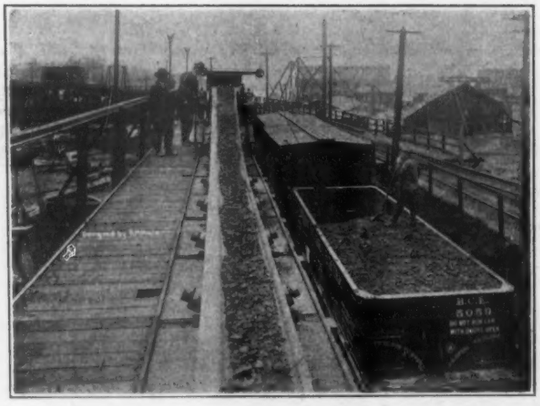


BOTTOM DAMP GRAVEL CARS.



UNLOADING TOWER AND WAGON WAY.

AUTOMATIC GRAB BUCKET.



BELT CONVEYOR FOR CAR LOADING.

By this system the number of levers is cut down by one and could be cut down by two were it not for the human equation. A two-drum hoist is used in place of the usual three-drum. The operator has four levers to look after, two frictions and two brakes (the one on the closing line being seldom used), and one foot lever.

The hoist is operated by a 50 h. p. A. C. constant speed motor, and when once started needs no further attention on the part of the operator. This leaves him free to devote his entire attention to three hand levers and one foot brake. With a variable speed motor and a three-drum hoist this plant would require two operators in the tower.

About 12 feet below the boom the tower is floored over and at this elevation and to one side the operator's house is projected out beyond the tower. The house has windows on three sides, the other being open into the tower, and gives the operator a clear view of the scow and his bucket at all times.

In the center of the tower at this level is a large hopper, into which the operator dumps the material from the bucket. The clam shell bucket is used for digging and hoisting exclusively and not as a means of conveying the material over the bunkers, and by having a hopper into which several bucketfuls can be dumped the bucket is used constantly for what it was intended. The remaining space on the operator's floor is used for a storeroom and a shop for repairs.

On the floor below, which is on a level with the top of the bunkers, is placed the main hoist and a small hoist for a car haul.

The material is taken out of the hopper on both sides by automatic gates and delivered to the two two-yard cars shown. These cars operate on tracks, which are 13 feet 4 inches centers and 36-inch gauge. The loaded cars run down an incline lengthwise of the bunkers and are dumped over any bin desired. Above the car is a cable running the full length of bunkers and held at the tower end by a heavy counterweight. On the cable is a button which can be easily moved. A forked lever which projects above the car and around the cable, strikes the button with considerable force; this lifts the counterweight and throws the lever over and opens the gates in the bottom of the car. A fixed stop is provided against which the lever strikes on its return journey to the hopper and closes the gates. The tracks are inclined in the tower on a grade of 8 per cent to give the cars a good start, but over the bunkers the grade is changed to 2 per cent.

A 7½ h. p. A. C. constant speed motor operates a two-drum side by side hoist to haul the cars back up the incline. All operating levers for the hoist and gates are carried to a platform where a second operator easily controls the distribution of the material in the bins. The operator is protected from the weather, but has a clear view of both cars at all times. The cars travel 156 feet over the top of the bunkers and have proven a most economical method of distributing material.

The main bunkers rest on extra heavy creosoted piling, driven quite close together. Hard pan was encountered close to the surface and the penetration of the piling was only from two to six feet. However, the settlement in a year's time has hardly been perceptible. The bunkers are the framed type, having the bottoms built as a self-contained truss. This simplifies the construction of the balance of the structure.

No special difficulties were encountered in building the plant except inconvenience in handling material. All of the piling and lumber was delivered on scows at once. There was no room on shore on which to pile and frame the lumber, so it was necessary to drive and cap the piles for the warehouse dock and store the lumber there. The rest of the piles were driven as rapidly as possible, and the roadways built. This gave some place to frame the lumber, and when this was done, the erection proceeded rapidly.

Bids were called for for the different sections of the work, but all tenders were so high that it was decided to carry on the work by day labor under the supervision of the engineer. The work was completed at a cost of $1,500 less than the lowest bid.

The bunkers had been in operation but a short time when the business grew to such proportions that Mr. Ritchie decided to proceed with the extension at once.

The original bunkers were designed for delivering into wagons only, but the addition was to be built to deliver into wagons and railway cars. This complicated the problems considerably, as the property did not readily adapt itself to getting in a sidetrack. An additional 100 feet of land was secured to the west of the old property.

It was impossible to get the cars down to the bunkers to load directly on account of the steep grade, so it was necessary to take the material to the cars. The B. C. Electric Railway contemplated some improvements in their trackage, and these had to be taken into consideration. Without going before the railroad commission, a long and tiresome procedure, permission could not be secured to cross Granville street with another track. Mr. Ritchie could not afford to take the chances of delay in going before the commission, so he instructed the engineer to proceed without crossing the street. The sharpest curve which the B. C. Electric would permit had a radius of 151 feet. A lay-out was made showing all feasible arrangements of tracks, and track No. 4 was finally decided upon as having the least objections.

The bunkers were built with a hopper bottom, but sloping towards the center. This gave vastly more storage space, but it did not permit of their being completely emptied by wagons alone, the gates, of course, having to be at fixed height. When the material fell below the level of the gates, some other method of getting it into wagons had to be devised. An emergency hopper was introduced into the conveying system, and the bunkers could then be emptied either into wagons or cars.

Bids were called for for the conveying system under general specifications, it being thought best to leave the details of machinery construction to the various manufacturers.

The conveying system is designed to handle sand, gravel or crushed rock (under 3 inches) at the rate of 100 yards per hour. It consists of two 20-inch belt conveyors, "A" and "B" (p. 572), which run horizontally under the new bunkers their full length of 96 feet and receive the material through 48 gates from the bins above. Each conveyor runs independently of the other, so that with either conveyor running the full capacity of the system will be attained. With both conveyors running, the feed is cut down so as not to overload elevator "C."

Both conveyors dump into a common hopper or curved chute and deliver onto the foot of elevator "C." High water comes nearly up to the point of delivery and water is encountered at all times a short distance below the surface of the ground. For this reason the pit was made as shallow as possible, and yet permits sand to run. All conveyors are provided with adjustable brushes at their head ends, to keep the belts clean.

Elevator "C" lifts the material from conveyors "A" and "B" to conveyor "D." The elevator runs at an angle of about 46 degrees, and is of the continuous bucket type with roller bearing chain of 18-inch pitch. It discharges by means of a bifurcated spout to conveyor "D" or to the wagon hopper between the conveyor trestle and the spur track.

The conveyor "D" runs horizontally on a trestle above and parallel to the railroad trestle, and has an automatic self propelled tripper designed to discharge into railroad cars. This tripper has a long-hinged extension spout and delivers the material near the center of the car, thus reducing the amount of trimming required. The extension is pulled up out of the way to permit box cars or the motor car to enter the sidetrack.

The two conveyors under the bunkers are driven by a 7½ h. p. A. C. motor at the head end. The center shaft has two Link Belt disc friction clutches for operating each conveyor separately. Elevator "C" is driven by a 15 h. p. A. C. motor geared directly to the head. Conveyor "D" is driven by a 7½ h. p. A. C. motor, also geared directly to the head. All motors are constant speed. All starting boxes are placed in the tower at the head of the elevator. Push buttons are installed every 12 feet along the entire system, so that the whole apparatus can be shut down quickly from any point in case of accident, the push buttons throwing out an automatic switch. They are started from the tower, however. A system of electric bells is installed, by which the man on the tripper can regulate the supply of material and communicate with the man under the bunkers.

The addition was rapidly built without any interruption to the operation of the original plant, and no particular difficulties were encountered. It was impossible to drive piles for the bunkers or trestle, so they were built on posts resting on mud sills.

TYPE OF CONSTRUCTION ON OLD PLANT.

DISCHARGE END OF BUNKERS.

SAND AND GRAVEL

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PITTSBURGH SAND AND GRAVEL NEWS,

Pittsburgh, Pa., Sept. 18, 1912.—This has been one of the busiest years in the history of Pittsburgh sand companies. They account for it by the enormous amount of municipal and public works going on and also to the fact that the steel corporation and nearly all the big manufacturing plants in this district are either building new plants or making big extensions. Another item which has helped the sand companies greatly is warehouse building. There has also been some big construction work done by the railroads and the trolley companies, which has afforded much play for concrete contractors and accordingly sales for the sand companies. All the boats on the river and also the dredges have been busy all summer. Better prices are being secured and except for the wet weather and the scarcity of teams Pittsburgh sand firms are feeling mighty good this month, especially in view of the fact that they are likely to have a continued good business all the fall.

Hon. W. P. Stevenson, superintendent of the Pennsylvania Sand Company, is spending a much needed vacation at Berkeley Springs, W. Va.

The Guiler Sand Company, of Connellsville, Pa., has bought 44 acres of sand near Grattstown, Pa., for $4,000. The company will build an incline from the property, which is 135 feet above the railroad tracks. It will develop the property as soon as possible. This makes seven plants for this company. It has two at Perryopolis, two at Connellsville, one at Latrobe, and one at New Stanton, Pa.

The steamboats and sand diggers of the Hudson & Glazier Company, of Kittanning, Pa., which were to have been sold at sheriff sale, will be retained by the company, as Mr. Hudson has purchased his partner's interest. He will continue the operation and has secured the contract for furnishing sand to the Kittanning Plate Glass Company.

The Iron City Sand Company, of Pittsburgh, has all its boats and dredges working and reports the busiest summer for many years. It begins to look like old times to this company's officials.

TENNESSEE GRAVEL NOTES.

Nashville, Tenn., Sept. 18.—H. Burgess, U. S. Engineer's office, this city, has been asking sealed proposals for rock and gravel excavation in the Tennessee river at Big Bend Shoals.

Edward Graham, commissioner of streets at Lebanon, has been advised that the railroad will furnish ten cars of crushed stone for use on the streets there. Quite a little work is to be done at Lebanon.

S. J. Veltman, of Paris, Tenn., is graveling the streets at McKenzie, Tenn., under a contract he has with the Board of Aldermen. He is using Camden gravel.

The Nashville, Chattanooga and St. Louis R. R. have awarded the contract for the new viaduct over their tracks on McCallie avenue to the Chickamauga Quarry and Construction Co., of Chattanooga. The structure will cost approximately $100,000.

Twenty-five separate bids for street work have been opened at Memphis. Williford and Barnett, J. Wetterstrom, Hughey and McTige, J. W. Menefee, F. D. Harvey and Co., S. B. Walker and Co., M. E. Larkin and others were among the bidders.

NEW YORK SAND AND GRAVEL NEWS.

New York, N. Y., Sept. 18.—Local dealers reported an exceedingly good amount of business during the past month, and also are of the opinion that the fall demand will be much heavier. The use of gravel in the manufacturing of concrete has increased to a large extent, as engineers are realizing that gravel is easier to handle and it makes a better concrete. The bulk of sand and gravel for the subways has not been delivered and dealers do not expect the contractors to be ready for their materials until next spring. An advance of 5 to 10 cents in the price of sand by January 1 is predicted by dealers. Sand is quoted at present at 45 cents a cubic yard, alongside, and gravel 85 cents, same terms.

Joseph N. Ely, of the Crescent Sand and Gravel Company, speaking of the local sand and gravel market, said: "We have never experienced such a heavy demand for sand and gravel that has been received of late. Business has been above the average for the past two or three months and we expect to have difficulty in supplying the demand of gravel. A large amount of sand and gravel has been used in public work and paving streets. The subway contractors do not expect to be ready for our materials until next spring. With the amount of business, we will be kept busy for the balance of the year, without a doubt; would not be surprised if the price of sand and gravel was advanced before long."

LOUISVILLE SAND AND GRAVEL NEWS.

Louisville, Sept. 18.—The sand and gravel situation in Louisville is in eminently satisfactory condition, according to companies engaged in that business. Demand has held up remarkably well during the summer, and with fall and more favorable weather scheduled to appear shortly a general feeling of optimism prevails in the trade. The market, as usual, has offered no feature worthy of comment, preserving the steadiness which has characterized it for many months.

Building operations in the Kentucky metropolis have been fully as active recently as at any time in the past. If any change has been evident it has been for the better. With several big buildings in this city on the verge of completion, others are rapidly being planned and the building boom which has been in evidence for some time will continue during 1913 with added impetus, according to the present outlook. Naturally sand and gravel men will share in the prosperity of the builders and members of the trade are looking forward to one of the most successful falls of their careers.

The Nugent Sand Company has completed numerous and extensive improvements in its plant at Sixth street and the river. The concern is now prepared to institute an aggressive business campaign and President Nugent expressed much satisfaction with the outlook for the immediate future. "Things are moving along nicely," stated Mr. Nugent, and from present indications the fall business will be even heavier than normal. A point which recently has elicited much comment, but which perhaps may be able to stand further advertisement, is the feeling of optimism which is apparent in the sand and gravel trade, as well as every other business in Kentucky this year. In view of the fact that a Presidential election is imminent this sentiment is really worthy of remark. All lines of business have failed to be unfavorably impressed with the fact that a new President is to be chosen shortly, and with the advent of fall a general livening up has been evident. This has been fully as true of the sand trade as any other, though, indeed, business has been so satisfactory during the summer that no complaint is in order."

CHICAGO SAND AND GRAVEL NEWS.

Chicago, Sept. 21.—Producers of sand and gravel report a good demand this month and a fair supply. The volume of trade is large and it is the general belief that exceedingly heavy business will continue until the close of the season. Prices this month continue about the same and opinion is divided concerning their showing stiffening and an upward tendency. All the sand and gravel needed, it is said, has been contracted for, up to the end of the year. The car shortage will not be felt any more than in previous years for the reason that gondola cars are used in the shipments of sand. These cars are mostly used in the transport of coal which make short hauls and on returning empty are intercepted for sand shipments which do not extend beyond a radius of 100 miles of Chicago. Conditions are generally considered good and preparations are made for handling the large volume of business which will tax the energies of all producers of sand and gravel from now on to the close of the season.

F. M. Richardson, president of the Richardson Sand Company, said: "Conditions in the sand and gravel industry are about the same as last month. The volume of trade is fair with prices somewhat better, showing an upward tendency. The car shortage is commencing to interfere with shipments in Chicago. There seem to be cars enough but not sufficient engines to haul them. With this exception, prospects in every way are fair for good business this fall."

P. M. Lewis, secretary and treasurer of the American Sand and Gravel Company, said: "Business is looking up naturally as September and October in the sand and gravel industry are the two big months in the year when things are rushed before cold weather sets in. We feel the shortage of cars by reason of slack deliveries of sand in Chicago, our field being practically in city and Cook county. Prices will stiffen as the shortage of cars begins to be felt keenly. There are good prospects for the fall trade, in fact as long as the season lasts we will have all the business we can possibly handle."

C. H. Stebbins, president of the Lake Shore Sand Company, speaking of the situation in the trade, said: "Volume of business and conditions have not changed much since last month. Prices are stiffening somewhat and show an upward tendency. There is really nothing new to note this month except the shortage of cars. This we have not felt as yet. Prospects are looking rather bright for the fall trade."

At the offices of the Atwood-Davis Sand Company it was stated that the volume of business is large this month and it is believed will continue so to the close of the season. Prices are low and show little improvement. Shortage of cars is felt a little earlier than last year, but as gondola cars are used exclusively in the shipment of sand and gravel will help out the situation on this score.

F. W. Renwick, vice president and general manager of the Joliet Sand & Gravel Company, stated that this was the best year as far as volume of business was concerned they had had in a long time. He said: "Volume of trade this month is very large usual for this period of the season. Prices have been satisfactory all the year around, we not touching the retail city trade. The car shortage this year will not affect the sand and gravel industry any more than previous years, because of the use of gondola cars which make short hauls loaded with coal, returning empties are intercepted and loaded with sand. As for instance in our case, our shipments do not extend beyond a radius of one hundred miles of Chicago. Conditions in general are good and prices satisfactory."

The Georgia and Florida Gravel Company, of Fleming, Ga., has been incorporated with $50,000 capital stock, to develop sand deposits.

The Grand Prairie Gravel Company, of Grand Prairie, Tex., has been incorporated, with a capital stock of $24,000, to do a gravel business. The incorporators are W. G. Liggett, of Harris county, and D. S. Harston, and R. L. Keith, of Dallas county.

The Geauga Silica Sand Company, Cleveland, O., has been incorporated; capital, $33,000. Harry O. Price, Roswell F. Flower, John H. Hogg. H. C. Maher, R. L. Toben.

Lime

The National Lime Manufacturers' Association

Meets Semi-Annually.

OFFICERS.

William E. Carson, Riverton, Va	President
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NEW YORK LIME NEWS.

New York, N. Y., Sept. 18.—The demand for lime was of good proportions during the last month, and from present indications the fall business will be good. Dealers report steady prices and have no complaint to make in regard to price cutting. A large number of building plans have been filed recently, and this would indicate that the demand for all building materials should be quite heavy during the building season next spring.

J. A. Curtin, of the Farnham-Cheshire Lime Company, spoke as follows in regard the local lime market: "Business came along nicely during the past month and unless something unforeseen happens to disturb general conditions we expect the large volume of business to continue for the balance of the season. Prices are steady. We are quoting in car lots finishing lime, 300 pound barrel, $1.55, and common lime, $1.25 per barrel of 300 lbs."

Foster F. Comstock, president of the Comstock Lime and Cement Company, stated: "We have received a fairly good amount of business during the past month and the prospects are very bright for a larger demand to materialize during the balance of the year. Prices have been well maintained and there is very little chance for lower prices to prevail from now on. Collections continue a little backward. We look for a good demand for lime to predominate during the next two or three months."

W. P. D. Moross, president and treasurer of the Chickamauga Cement Co., at Rossville, Ga., has returned from New York and reports good success on cement paint business, on which he has some patents.

PITTSBURGH LIME NEWS.

Pittsburgh, Pa., Sept. 18, 1912.—Demand for agricultural lime the past six weeks has been heavier than ever before. Farmers are taking to this more every year and are realizing splendid results from its sales. Those concerns which make a specialty of this fertilizer are having hard work to get enough of it and cars sufficient to satisfy the demand. Limestone companies have been unusually busy, also due to the large amount of road building in progress. Allegheny county has taken a big lot of this product this year chiefly from the quarries in Butler and Lawrence counties, Pa. State road contracts are also making big sales for the limestone companies Lime for building purposes has not had a very good sale this summer. Demand during August was somewhat better and it is expected that there will be a good fall trade.

The Standard Lime & Stone Company, of Connellsville, Pa., is making arrangements to build a 1,000-foot railroad from its quarries at Bidwell, Pa., to the stone crushers. The new railroad is to replace a 500-foot chute to the crusher. Surveys are now being made by the West Penn Engineering Company.

The Lisbon Lime Company is unusually busy at its quarries near Lisbon, Ohio. Manager Albert Smith is having hard work to keep pace with the orders. The company digs its own coal and has two lines of tram road to connect the lime and coal mines with the furnace. This company manufactures as good agricultural lime for fertilizer as can be found anywhere in the country. Its sales so far have been chiefly to Columbia county, Ohio, but the demand is increasing rapidly.

The Pittsburgh Limestone Company is arranging to build a big central power station 50 x 95 feet at Caylor, Pa. It will require 50,000 cubic feet of concrete. The company is now taking bids through contractors at Kittanning, Pa.

The Duck Run Lime Company, of New Castle, Pa., has received a state grant of a perpetual charter. It has a capital of $15,000 and its directors are: Capt. M. S. Marquis, Henry McCrary, J. R. Baldwin, Edward M. Fisher and Samuel E. Osborne. The company has started work on plants to mine limestone, coal and other minerals.

Lamuel R. Spong, of West Fairview, Pa., and others have organized the United Lime & Stone Company, which has received a Pennsylvania charter and has a capital of $5,000.

SAN FRANCISCO LIME NEWS.

San Francisco, Cal., Sept. 17.—The lime market still appears somewhat irregular, certain grades, especially those used in plastering, being in good demand, while other lines are quiet.

The wholesale manufacture of lime, mortar and plaster and its distribution from a central point to various jobs by wagons or trucks is carried on in both Los Angeles and Portland, Ore., but not in San Francisco. This is due to a peculiar condition here: the fact that the natural soil in most parts of the city is sand, which is well adapted for use in mortar and lime plaster. In many cases a contractor can get his sand from a neighboring vacant lot or excavation, and in any case the cost is far less than in cities which ship in by rail. Considering the great proportion of sand in ordinary mortar and rough plaster, it has been found impossible for a mortar mixer to sell as cheaply as the contractor can mix his own mortar on the job. The city of Oakland is differently situated, however, and there has been some talk of the establishment there of a central mixing plant.

W. O. Badgley, of the Pacific Lime & Plaster Company, says: "We are very busy at present. Prices are not as firm as we would like to see them, but the volume of business is very satisfactory."

W. S. McLean, of the Holmes Lime Company, says: "As usual, we are oversold on our 'Diamond' barrel finishing lime. Our brick lime has been moving along evenly, but not to the same extent as our Diamond finishing lime. Our 'Vigorite' brand hydrated lime is being used right along in concrete for making same waterproof. In addition to the United States Government, we have been supplying several large private enterprises with out Vigorite hydrated lime for this purpose, notably the Nathan Dohrmann warehouse now under construction. Our trade on Vigorite hydrated lime as a medium of soil fertilization has always been good, and is slowly but steadily on the increase, as the farmer learns its value."

The Rogue River Lime Company, which has been doing a lot of development work on its property on Cheney Creek, near Grant's Pass, Ore., has decided to install a tramway and new kilns at its quarry.

The Limestone Crusher Company, of Bluefield, W. Va., has increased its capital stock from $30,000 to $50,000.

Ohio Farmers' Lime Co., Cleveland, O., has been incorporated, with a capital stock of $10,000; G. A. Schroeder and G. D. Williams.

United Lime and Stone Company, Harrisburg, Pa., has been incorporated; capital, $5,000. Incorporators: Samuel L. Spong, George H. Allaman, Edna C. Spong, West Fairview; John O. Hipple, Wormleysburg; John W. Wetzel, Carlisle.

A certificate of incorporation was filed by the Grangers' Lime & Marble Company, of Danbury, Conn., to manufacture and deal in lime and to quarry limestone and marble. The capital is to be $75,000 and the incorporators are Wilbur F. Tomlinson, Royal D. Tomlinson and Jacob G. Irving.

Application for a charter in Tennessee has been filed by the Catoosa Limestone Products Company, which is to have its headquarters in Chattanooga. The proposed charter provides for mining limestone and selling limestone products. The authorized capital is $25,000 and the incorporators are A. P. Gaines, J. L. Davies, F. C. Davies, W. W. Jones and Charles C. Moore. These incorporators, a short time ago, bought over the business concern heretofore having its headquarters at the limestone plant, which is located in North Georgia. The quarry will be operated on an extensive scale.

Machinery for the Crystal River Rock Company's new plant at Crystal River, Fla., is arriving and will be installed at an early date.

The big stone quarries near Amherst, Ohio, which have a number of representatives in Pittsburgh, have lately increased the wages of their workmen 10 and 15 cents a day.

The Buckeye Stone & Clay Co., Van Wert, N. Y., has been incorporated, to quarry limestone; capital, $100,000. Incorporators: J. Durk, C. F. Miller, C. A. Woods, A. P. Fall, O. E. Leinard.

The Kerr stone quarry at Kankakee, Ill., was destroyed, at a loss of probably $3,500, in a fire recently. The quarry was located east of the Illinois Central tracks and just north of the river.

The Cold Springs Lime & Stone Co., Cincinnati, O., has been incorporated; builders and contractors' supplies; cap., $50,000. Incorporators: A. G. Steinman, F. H. Ballman, J. Striker, F. Seibert, M. Ibold.

The Catoosa Lime Stone Products Co. was recently launched at Chattanooga for mining limestone and selling limestone products. The authorized capital is $25,000. The incorporators are: A. P. Gaines, J. L. Davies, W. W. Jones and C. C. Moore.

The Chickamauga Quarry and Construction Co., of Chattanooga, Tenn., has been awarded a contract for the erection of the $20,000 McCallie avenue viaduct, an enterprise which will be undertaken jointly by the city, the Southern and the Western and Atlantic Railway Companies.

Another large tract of quarry land was added to the holdings of Frank W. Hunt recently when he paid Miss Alice Beiderlinden $12,000 for 26 acres lying west of the Iron Mountain railway track and adjoining the west limits of the city of Springfield, Mo. Some months ago $10,000 was paid by Hunt for a similar tract adjoining this one. He is now the owner of one of the most extensive quarries of marble deposits in southwest Missouri, and with his large stone cutting works in the east part of the city, is well equipped to handle large stone contracts.

ROAD EXTENSION.

Work will be commenced soon on a steam railroad of standard gauge from the quarries and plant of the Turkey Creek Stone & Gypsum Company, at Stone City, Colo., on Turkey Creek to Colorado Springs, a distance of about 35 miles.

This company recently completed its road into Pueblo and is now operating on a large scale with about 500 men employed at the quarries.

The company recently let a contract to the American Clay Machinery Company for a large amount of machinery and the operations of the company will be greatly enlarged.

SAN FRANCISCO QUARRY NEWS.

The Granite Rock Company, of Watsonville, Cal., has a contract amounting to $42,599 for furnishing rock for the Hollister and San Juan road.

The Gibraltar Development Company has been incorporated at Hood River, Ore., by John Koberg, C. Dethman and William Ehrck, for the purpose of starting a paving block quarry near that city.

COLUMBIA QUARRY BURNED.

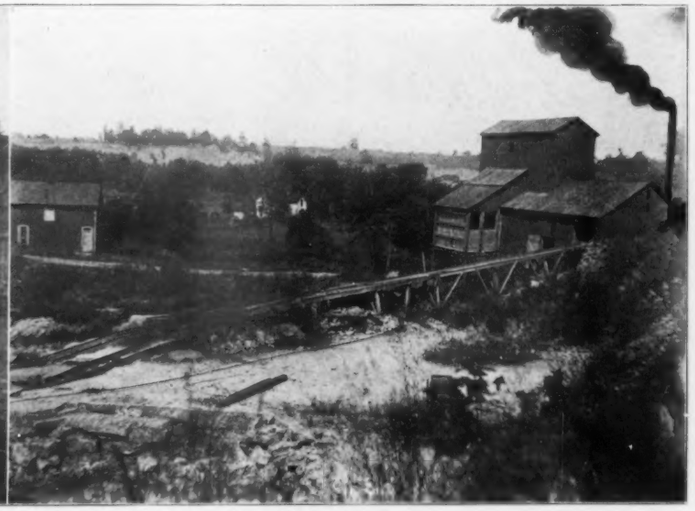
Fire totally destroyed the buildings and machinery of the Columbia Quarry Company, at Columbia, Ill., a short time ago, with a loss of $25,000. The company is controlled by a syndicate of St. Louis business men. The origin of the fire could not be ascertained.

When discovered the fire had gained considerable headway, and as Columbia, which is twelve miles south of Belleville, Ill., has no fire-fighting facilities, nothing could be done to control it.

NEW HYDRATING PLANT.

In the Mad river valley, in southern central Ohio, is located one of the finest lime producing sections in the United States. That is the impression one gets after making an investigation of the district and witnessing what is being done there. Way back in the early sixties the Moores family started the development of this great deposit of dolomite. Wm. B. Moores made lime there in the primitive way and operations were carried on modestly until the present plant, which opened in

ONE OF THE BATTERIES OF MODERN GAS BURNING KILNS, SHOWING THE NEW HYDRAULIC PLANT, THE MOORE'S LIME CO.



ONE OF THE DOLOMITE PLANTS ON THE BIG FOUR DIVISION OF THE PROPERTY—CAPACITY, 15 CARS A DAY.

1890. For thirty years John Moores carried on the business, till at his death his son, F. Lawson Moores, and Wm. Moores succeeded to the business. By steady steps the business has continued. The present company is a closed corporation, except for John H. Higgins, treasurer. It is the oldest lime business operating in the Springfield district. Its capital is $150,000, with F. Lawson Moores as president, J. A. Higgins treasurer and Geo. S. Keck sales manager. A great hydrating plant, equipped with the Kritzer system, is nearing completion and will soon be operated, so that dealers in the central west can get hydrated lime from this company.

The quarries and plants of the Moores Lime Company are located four miles south of Springfield on both the Erie and Big Four railroads. The main property is on the Erie, with supplementary quarries and plants on the Big Four, the same distance from Springfield. The principal operations are on the Erie. The hydrating plant that is now being put in will have a 40-ton daily capacity, with the necessary machinery for ground lime for the fertilizer and glass trade. The lime of this deposit is from unstratified rock, and produces a very high grade finished lime, as all the contractors and plasterers in central west who have used it know. When a test was made to determine the quality of hydrated lime that might be produced, a carload was completely slack, and there were only 97 pounds of waste out of the 38,000 pounds tested. The plant is so located that the product can be shipped in competition with any of the quarries east of the Mississippi river. The company will be ready to ship hydrated lime soon after the first of October.

While the writer was at the quarries the men were busy blasting the rock and conveying it in cars to the main battery of kilns, where it is burned by the gas producer method; and, as one stands opposite the plant, the first primitive kiln built in the early sixties is plainly in view. Contrasted with the modern plant, almost in the shadow of which it stands, the progression from the ancient method to the modern is plainly shown.

Every retailer who is alive to the commercial possibilities and the profits from the handling of hydrated lime ought to get into communication with the Moores Lime Company, so as to get a share of the output that is coming soon. Retailers well understand and are finding out more every day about the desirability of handling hydrated lime, and of educating their trade in its uses and the economy of using it.

THE ORIGINAL KILN, PRESERVED AS A MONUMENT TO THE ORIGINAL FOUNDER.

NEAR VIEW OF THE WORKING FACE OF THE PROPERTY.

A TYPICAL STREET SHOWING SOME OF THE HOMES OF EMPLOYES.

OPERATIONS ON QUARRY FACE.

QUARRY FACE 1000 FEET LONG, DEPTH 60 FEET.

LARGE GYPSUM BEDS.

Over Nine Billion Tons Estimated by United States Geological Survey in Utah Deposits.

Last year, while making an examination of the coal along the eastern edge of Castle Valley, Utah, Charles T. Lupton, of the United States geological survey, made a reconnaissance of the deposits of gypsum along the west flank of the San Rafael swell. Notes taken on this reconnaissance form the basis of a report on this subject recently published by the United States geological survey as Bulletin No. 530-N.

The area under examination is 60 to 80 miles long and 20 to 30 miles wide. The gypsum-bearing rocks in the area outcrop in a belt ranging in width from a few hundred feet in the vicinity of Cedar mountain or Red plateau, at the north end of the area, to three or four miles near the center of the west flank of the swell, along the road leading from Emery eastward to the Globe copper mine. According to Mr. Lupton, probably the most convenient point from which to visit the gypsum-bearing rocks is Cleveland, about six miles east of Huntington. A good road leads from Cleveland in a southeasterly direction to Buckhorn Flat. A good road has also been built from Emery eastward across the outcrop of the gypsum. Next to the wagon road leading from Cleveland to Buckhorn Flat, this road would be the best one over which to haul the gypsum should it be mined.

So far as known no gypsum is now being mined in the San Rafael swell region, although it is possible that small quantities have been used by ranchers and others desiring plaster of paris or land plaster; but the quantity removed from the field is insignificant. Although it is evident that the region contains an enormous supply of gypsum, no great quantity will be mined until better transportation facilities are available. A moderate estimate of the amount of gypsum contained in these deposits is 9,701,600,000 tons—2,425,400,000 tons in one bed, which has an average thickness of 10 feet, and 7,276,200,000 tons in another bed, which is 30 feet thick.

LOUISVILLE PLASTER NEWS.

Louisville, Sept. 18.—The wall plaster business, which during the summer has been fully up to the standard of other years, has more than maintained its fast early pace, and has opened up recently in grand shape. Building operations, which still are numerous in Louisville, have of course been responsible for the activity in the wall plaster business. With the majority of lines of business very close to a standstill during the past summer, building contractors have provided striking exceptions to the rule and all have had their hands full. The same has therefore been true of wall plaster men, and the volume of trade in evidence has been a source of considerable satisfaction.

The prospects for the next month are up to par in every respect. Perhaps never before were so many new edifices going up, both in and around Louisville. Small residences and business houses are so numerous as to excite little comment, while plans for skyscrapers and other handsome new buildings of importance are also much in evidence. Wall plaster men are unanimous in the verdict that the next few months will be productive of a heavy volume of business, while opinions as to the trade in 1913 also are generally high class.

What is to be the highest building in Louisville will be erected on the southeast corner of Fourth and Market streets. Work will begin about the first of the new year, at the very latest, it is said. The corner-stone of the new $350,000 Young Men's Christian Association building at Third street and Broadway was recently laid and work on the structure will be rushed. Excavation for the handsome Starks building on the corner of Fourth and Walnut streets has practically been completed and the actual construction work will proceed at once. Shapinsky's new store on Fourth street, near Jefferson, will shortly be ready for the wall plaster men, while the handsome establishment to be occupied by the Boston Shoe Company, on Fourth, near Green, also is assuming shape. These are but a few of the choice plums which will fall in the way of the wall plaster trade in the Kentucky metropolis, and the members of that business are satisfied with such a promising outlook.

The Southern Wall Plaster Company has spent an unusually busy month completing the new railroad Y. M. C. A. building at Third and Central, as well as the Holy Name church in the southern section of Louisville. These two handsome contracts disposed of, the company is turning its attention to a half dozen others of importance. Among these is the work on the new Brandeis residence on the River Road. A. J. Brandeis, a wealthy grain man, is erecting a new home, sparing no expense. The contract will amount to $2,900 for the Southern Wall Plaster Company. The concern has just completed material improvements in its plant, made necessary by the press of business. A new Day mixer has been installed at a cost of about $400. The Southern now is using two mixers. Another improvement is a new Clark motor, with an oil starter. The latter is something new and has been found to be quite an improvement over other methods.

The Kentucky Wall Plaster Company is getting a nice share of business and is preparing to enter bids on several contracts worth thousands of dollars. B. J. Campbell, head of the concern, is more than gratified with present conditions, and stated that the past summer has surpassed all expectations. With Louisville in the midst of a building boom, or rather exhibiting a brisk, but consistent growth, Mr. Campbell is entertaining no fears in regard to the future of the business of which he is head.

The Atlas Wall Plaster Company, located in Parkland, has secured sufficient business to keep it working at full capacity. Parkland, incidentally, has shown remarkable gain in buildings, that section of the city having built up more quickly than any other. The Atlas, being right on the ground, has been in a position to secure the bulk of the trade. The company is now preparing for bids on a number of cottages which are to be built in that part of the city, the aggregate sum involved running well up into three figures. Other contracts which are in prospect insure a heavy volume of business during the coming winter.

SAN FRANCISCO PLASTER NEWS.

San Francisco, Cal., Sept. 17, 1912.—The Pacific Coast Gypsum Company is erecting bunkers with a capacity of 3,000 tons and a wharf with a frontage of 235 feet at its station at Gypsum, Alaska. This structure will replace that which collapsed June 4. W. R. Nichols, manager of the company, who recently returned to his headquarters at Tacoma, Wash., from the plant, says the work will be completed within 90 days.

TENNESSEE PLASTER NOTES.

Nashville, Tenn., Sept. 18.—Cooper and Ferguson, contracting plasterers, have finished plastering the Juvenile Reformatory, which was quite a large contract. They report business very good at their Nashville, Tenn., place, 324½ Deaderick street. Cooper and Ferguson have been doing the plastering on the Joe Yowell residence, Richland avenue, and the stucco work on the Thomas residence, near the Golf Club in Nashville.

W. W. Fischer, of the Fischer Lime and Cement Co., Memphis, states that the plaster trade is very good in that city.

The Gillen Dock, Bridge & Construction Co. has been greatly hampered all summer by tardy stone shipments to its operation at Ashtabula, Ohio. Last week it received a special train of 53 cars in one day. Edward Gillen is president and general manager of the concern, which has a big government contract at Ashtabula.

The Morgantown & Kingwood Railroad Co. has opened up the old Bennett stone quarry on the mountainside above Dellslow, W. Va., and is taking out a large amount of stone for rip rap work along Decker's Creek within the city limits of Morgantown, W. Va.

The Barren River Power Co., Bowling Green, Ky., has been incorporated; capital $10,000. Incorporators: Walter Gaines, John and George Oman. The purpose of the company is to quarry rock by water power. The new company has purchased from the Bolton heirs a three-story mill on Barren River at Brown's Lock, where machinery will be installed at once and put in operation.

ILLINOIS QUARRIES.

Springfield, Ill., Sept. 20.—William Turk has resigned his place with the Reliance Quarry, at Alton, to take a position as superintendent of the Bellefontaine quarry, owned by the St. Louis Portland Cement Co. He is succeeded by Sidney Robinson.

The Wabash railroad is said to be contemplating opening the Ritchie quarry near Joliet.

Fire, August, 12, destroyed buildings and machinery at the plant of the Columbin Quarry Co., two miles from Columbia, causing a loss of $50,000.

James Smith, foreman of Lochyear's quarry, at Alton, died September 3 of injuries received in a slide. George Means, another foreman, who was buried forty-five minutes under earth and rock, probably will recover.

The crusher building of the West Side Quarries Company at Kankakee was destroyed by fire Sept. 4, causing a loss of $21,000, which is covered by $9,000 insurance. As the quarry is outside of the fire limits, little could be done by the city fire department. The plant will be rebuilt in time for next season's business.

PITTSBURGH QUARRY NEWS.

Pittsburgh, Pa., Sept. 18, 1912.—The stone market in this vicinity this summer has been confined very largely to bridge stone. Limestone for various uses has been sold in large quantities. Sales of ruble stone, etc., have not been as large as was anticipated.

The Iron City Stone & Construction Co. of this city has just received a contract for a reinforced bridge over Loyalhanna Creek at Latrobe, Pa., to cost $35,000.

The Yough Sand Stone Co., which was organized a year ago, is now starting to develop a 100-acre property along the new line of the Western Maryland Railroad. It recently purchased two carloads of machinery in this city and expects to be shipping before Oct. 1. The plant will have a capacity of 500 tons every 24 hours. The rock is solid sand rock, more than 100 feet in depth and can be operated for years without any uncovering. The sand is 99 per cent silica. Following are directors of the company: J. J. McFarland, C. E. Foltz, Frank J. McFarland, A. McFarland. Frank J. McFarland will be secretary-treasurer and general manager of the company.

SAN FRANCISCO QUARRY NEWS.

San Francisco, Cal., Sept. 17.—Since the first of the month the work of the Hammon Construction Company in extending the concrete cap on the Humboldt Bay jetty has been hampered by stormy weather, and frequent interruptions are expected from now on through the winter. Rock for the jetty itself is being placed faster than ever.

Work will be started immediately on a series of rock bunkers near the Northern Electric depot at Chico, Cal., to be used by the Natomas Consolidated.

San Benito county, Cal., is taking figures on a portable rock crushing and screening outfit.

MILWAUKEE QUARRY NEWS.

Milwaukee, Wis., Sept. 18.—News has reached Milwaukee that the largest single blast ever made in any of the quarries in Northern Wisconsin was exploded recently in the Smith quarry at Sturgeon Bay. The charge consisted of 2,700 pounds of dynamite, and it displaced 14,000 tons of stone, hurling boulders, weighing several tons, from the top of the bluff, a distance of several hundred feet. The explosive was placed in ten holes, drilled to a depth of thirty-one feet. Following the explosion, the whole front of the rock ledge of the cliff for a distance of 120 feet along its face, and thirty feet back from the ledge, gave way.

It is reported that the American Refractories Company, which has been taking rock from the Wisconsin state park at Devil's Lake, is contemplating the erection of a large hotel on the east shore of Devil's Lake.

CLAY

OVER TEN BILLION BRICKS.

Value of Clay Products in the United States for 1911 Over $162,000,000.

The clay-working industries of the United States had in 1911 a production valued at $162,236,181, according to the United States Geological Survey, which has just issued a chart, compiled by Jefferson Middleton, showing the total output, by States, of all the different clay products. The total production of common brick was 8,475,277,000, valued at $49,885,262. Of this New York contributed the largest amount, namely, 1,143,726,000, valued at $5,918,286. Illinois was second in output, with 1,074,486,000, but the product had the greater value of $6,126,911. No other state reached the billion mark. Pennsylvania coming third, with 774,122,000 bricks. The chart gives the figures of production for other kinds of brick—vetrified brick, front brick, fire brick, etc.—as well as for terra cotta, draintile, sewer pipe, stove lining, and pottery products. The production of all kinds of bricks was more than ten billion.

In total production of clay products Ohio heads the list, with a value of $32,663,895, or one-fifth of the total for the United States; Pennsylvania is second, with $20,270,033; New Jersey third, with $18,178,228; and Illinois fourth, with $14,333,011.

LOUISVILLE CLAY NEWS.

Louisville, Sept. 18.—Eminently satisfactory has been the brick business in Louisville during the past month. Of the unprecedented number of buildings now going up in the Kentucky city, a satisfactory proportion are to be built of brick, and manufacturers are working full capacity in supplying the steady demand for their products. With many residents of Louisville building or preparing to build new homes in various parts of the city, and building at its height, the prospects for a continuation of the present gratifying business are excellent.

The manufacturers of paving brick also are evincing much satisfaction over the outlook. The city of Louisville will shortly begin work on the construction of streets in numerous portions of Louisville, while announcement has been made of the repair of numerous others. The paving brick men are assured of a source of business for the next few months and the situation is sound in every respect.

The East End Brick Company, of Louisville, is working full capacity and is getting a volume of business, which stands as a silent but forcible rebuke to the calamity criers who have pedicted the usual ante-Presidential election lethargy in Louisville and elsewhere. Contrary to these prophecies of disaster, officers of the East End company report demand as all that could be wished. The plant of the company has been put in first-class shape for fall, repairs being made where necessary and other improvements having been completed.

MILWAUKEE CLAY NEWS.

Milwaukee, Wis., Sept. 18.—Brick manufacturers in this city and about the state are operating their plants overtime in an effort to catch up with orders. Building operations have been active throughout the summer and the demand for brick has been unusually good.

The scarcity of labor has been causing manufacturers considerable concern. Business in all lines of activity is so much better that there is a demand for men which is hard to satisfy. Jobs are now hunting men, declares the recent monthly report of the Wisconsin Free Employment Bureau. It is estimated that there are 25 per cent more jobs than there are men to fill them. The same condition is true among skilled as well as unskilled laborers.

The annual convention of the central district association of the National Mantel and Tile Dealers' Association was held in Milwaukee August 30 and 31, with about thirty members, several accompanied by their wives, in attendance. Edward P. Butler, of Milwaukee, was reëlected president. Other officers were named as follows: Vice-president, Bert Moore, St. Paul; treasurer, Thomas E. Beck, Chicago. The directors chosen included Robert Beck, Detroit; William Fritz, Peoria, Ill.; H. P. Stuart, Waterloo, Ia., and Charles Shannon, Cincinnati. The entertainment features included a banquet at the Hotel Pfister, the headquarters of the convention, and an automobile ride about the city. The states represented included Wisconsin, Illinois, Iowa, Indiana, Ohio, Minnesota and Michigan.

PITTSBURGH CLAY NEWS.

Pittsburgh, Pa., Sept. 18, 1912.—Brick concerns throughout the Pittsburgh district are busy at their respective plants. A turn in the tide has come and demand is now ahead of supply. Stocks are going down instead of coming up at the plants. This is especially true of building brick, sales of which, however, were made largely outside of this district this summer. Houston Brothers Co. and other big brick manufacturing concerns report splendid prospects for fall trade and say that the market for Pittsburgh products has been increased in its extent.

The plant of the Warren Silica Co., at Torpedo, Pa., was started two weeks ago. This is one of the most thrifty industries in Warren county and now has 75 men on its payroll.

When the "Made in Pittsburgh" train pulled out of this city Monday night, September 9, to start on its journey of 4,100 miles, in which it will invade 18 states and make good advertising stops at 36 cities, it had for its chairman John H. Jones, president of the Pittsburgh-Buffalo Co., whose trade in building supplies, especially brick, is almost international. On the train also, to represent the Mayor of Pittsburgh, was James W. Wardrop, sales manager of the Pittsburgh-Buffalo Co. It may be further added that the big exhibit of the Pittsburgh-Buffalo Co., which occupied the center of one of the four express cars that were attached to the long train for exhibition purposes, was one of the most unique and interesting on the train. The train was sent out under the auspices of the Pittsburgh Chamber of Commerce. The Pittsburgh Industrial Development Commission is also very much on board and its publicity manager, J. Jerome Nordman, is showing to every city along the route moving pictures of the Steel City in all its various beauties and immense industrial and engineering operations.

GERMAN MANUFACTURERS HERE

A party of distinguished manufacturers from Germany paid Chicago a visit Sept. 19, 20 and 21, inspecting brick, tile and cement plants. The party has been touring the principal cities and learning much about American methods of manufacturing brick, tile, pottery and cement. They included many millionaires and leading manufacturers of the German empire.

While in Chicago they inspected the plant of the Illinois Brick Company, the Universal Portland Cement plant at Gary and on Saturday were conducted through the Northwestern Terra Cotta Company's plant.

They were much pleased with what they saw and expressed themselves as delighted to have had the opportunity of seeing how we do things in America.

They were under the direction of Prof. Orten of the Columbus, Ohio, Ceramic Department. Previous to coming to this city they visited plants at New York, were received by President Taft at Washington, saw the manufactories at Philadelphia, Trenton, the Tidewater Cement plant at Union Bridge, Baltimore, the Lehigh plant at Allentown, Pittsburgh, East Liverpool, New Lexington and Columbus. From Chicago they went to Buffalo, Niagara Falls and Albany.

In the party were Dr. Kauffmann of Dresden; W. H. Stanley, representative of the Hamburg American Line; Paul Rossbach, brick manufacturer of Plauen; Arthur Troger, leather manufacturer of Plauen; John Schlosse, engineer, of Meissen; Mr. and Mrs. Otto Koehns, Fordestedt; Dr. Kneisel, Hanover, director of cement works; Maximillian Tonolla, brick manufacturer of Bucarest; Mr. Kircher, commercial commissioner of Grunstedt; M. Ehrhardt, brick and tile manufacturer of Berlin; Mr. and Mrs. Schott of the Heidelberg chamber of commerce; Dr. Otto Schott of New York; Mr. and Mrs. August Mosel, Klotze.

IOWA'S CLAY PRODUCTS VALUED AT $4,432,874.

The value of the brick, tile, fireproofing, pottery, and various other clay products made in Iowa in 1911, according to the United States Geological Survey, was $4,432,874. This is a considerable decrease compared with the figures for 1910.

SAND-LIME BRICK

SAND LIME BRICK DEFENDED.

An article in the August number of The Clay-Worker against sand-lime brick brought forth the following reply from the Rochester Composite Brick Co.:

September 10, 1912.

T. A. Randall & Co.,
Indianapolis, Ind.

Gentlemen:

I wish to take exception to an article which you published in your August issue of the Clay Worker, relative to the so-called "Checkered Career of Sand-Lime Brick."

I was very much surprised at the article, especially an editorial in so prominent a magazine as yours.

From the official report of the United States Geological Survey, of 1911, on the production of sand-lime brick, I will admit it shows a falling off from 1910, of slightly less than $300,000, or, 25,000,000 brick. However, we feel that the report is wrong, not the fault of the United States Government, for they are very anxious to get all the information possible as to the production of sand-lime brick, as they are adopting them for their own use.

It is unfortunate that the manufacturers, when they have been asked for information relative to their production, have failed to comply, as there was a greater production, of greater value in 1911, than in 1910.

We are not marching at the head of the procession with a brass band, making "a lot of noise," saying what we are going to do to the clay brick people, or anybody else, but are simply going along, minding our own business, and producing sand-lime brick of far superior quality than ever before, and our output this year has far exceeded that of 1911.

The sand-lime brick will exceed all tests of tensile, compression, fire-resisting qualities, over the ordinary clay, common brick.

The architects, engineers and the general public in Rochester, anyway, realize this, and are specifying Rochester composite brick in their work.

You forget that we are cutting into the concrete construction, when we furnish sand-lime brick for a building, and, instead of knocking an industry, which helps support your magazines, you should give them credit for boosting the brick business.

Your Mr. Randall, when here in 1911, at the paving brick convention, called on the writer, and was very enthusiastic in obtaining information regarding our business for the year, and when we told him, he seemed very much surprised.

Did we get a write-up in the Clay Worker? No. Any other broad thinking man in "Brick" or "Rock Products" would have given us a write-up.

If you will come to Rochester, we can give you something to write about, which will be of interest to the building public. We can show you a plant turning out from 48,000 to 50,000 perfect brick per day, six days per week, and if business continues, we will have to run a double shift, before the season closes. I can show you buildings, started with red brick, and before they had gone very far, our brick were substituted, and the building completed with them.

I think if you want the support of sand-lime brick people it would be wise to co-operate with them.

Yours truly,
Rochester Composite Brick Co.,
Per General Manager.

NO REASON FOR DISCRIMINATION.

It frequently happens that there are discriminations against materials on the part of engineering contractors and on the part of architects who do not do themselves the justice to examine the materials which they ruthlessly condemn. There is perhaps no line of human activity at the present time in which there is so much improvement as with all building materials. Yet we find that those who consider themselves the leaders in these respective lines do not hesitate to condemn the modern improvements in structural materials without even giving the matter a passing consideration.

The sand-lime brick has taken its place amongst the building materials of this country and for many purposes it cannot be equalled by any other product obtainable. Since the standardization measures that were adopted by the American Association of Manufacturers of Sand-Lime Products has gone into operation, the importance of the brick is guaranteed to the user and the specifying architect as well as the engineering contractor need no longer hesitate to use the bricks under the guarantee of the manufacturers who make them by the standards of the American Association. No one who is an expert in this matter of bricks will hesitate for a moment to say that the sand-lime bricks are all they should be when they come up to the standard specifications which were adopted with no little expenditure of money and effort to make them what they should be.

It is reported that the sand-lime brick plant of the Standard Brick & Tile Company at San Bernardino, Cal., will be ready to start up in about a month. The buildings are practically complete, and the machinery is now arriving.

CANADA PEBBLES.

I shall think of the pebbly beaches,
And the great rocks, washed and scarred
By the waters that scour their faces,
And cut deep holes in their sides;
Of the bays and open spaces
In the great lake, vast and wide.
—Warburton.

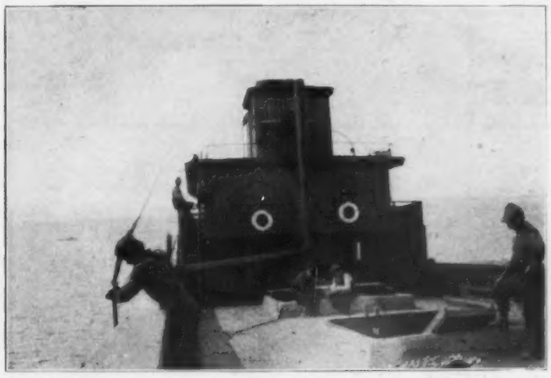
The average individual today who uses some product of the modern industrial system gives little thought to the factors of production which have had a part in the manufacture of the commodity. The purchaser of a pair of shoes concerns himself but little, or not at all, with the industry of producing tan-bark, and the contractor who lays a concrete walk, or rears an office building, has but scant interest in the mining of pebbles which have ground the cement he uses, yet the production of tan-bark and the mining of pebbles are each necessary to the industries with which they are associated. The contractor is interested in the quality of the cement he uses, the cement operator is also, but the operator is further concerned with pebbles, their use as a grinding material being essential to the economical production of cement. The operator requires a certain chemical analysis of his raw materials, their value being determined by such analysis, but the value of a pebble is due to certain physical properties. These properties are chiefly hardness with toughness, uniformity of shape, size, and even wearing.

Pebbles fulfilling all these requirements, and which have found favor with a great many cement manufacturers, are mined by the Canada Pebble Co. Limited, of Port Arthur, Ontario. Their beaches are located on the north shore of Lake Superior. The geology is a matter for speculation, the adjacent rock formation being dissimilar to that of the pebbles; the local formation is trap, greenstone and porphyry, all being basic, while the beaches are acidic. The only explanation for the occurrence seems to be glacial deposition and the subsequent action of water on the drift, grinding and carrying away the softer and rounding the harder materials. This water or wave action has produced

W. E. MANHARDT, ENGINEER, CANADA PEBBLE CO.

shapes leaves nothing to be desired in the pebble supplied to the trade.

In the rigorous climate of the north country Spring comes late and Fall early, the beaches are piled high with ice late in April and frost and snow make an appearance in October, leaving but six months for operation, but no time is lost, the plants working night and day in two shifts of ten hours each.



LOADING CANADA PEBBLES.

The plants are worked in units mounted on a broad gauge track, the units moving ahead as the supply of material is exhausted and working over an area of about one acre per month. Light for the entire workings, including offices, sleeping quarters, dining-hall and warehouses, is supplied by a central power station, the current for the movable units being taken from main circuits conveniently situated, while heat is supplied to the plants by steam from their individual boilers.

The southwest exposure of the beaches to a stretch of lake two hundred and seventy-five miles in extent leaves them open to violent storms and heavy seas, and makes the loading of boats very difficult. Wharves have been built only to be "cleaned up" by the sweeping seas of Lake Superior; however, a modern system of loading conveyors is to be installed which will eliminate present difficulties.

The location of the properties on the greatest of inland water systems makes possible the cheap transportation and the disposition of material at the distributing points: Duluth, Chicago, Owen Sound (Canada), Detroit, Buffalo and Montreal, where stocks are maintained from which immediate shipments can be made to any point in the United States or Canada.

Canada pebbles, as supplied to the trade, are unexcelled in uniformity of sizes and regularity of shapes, and combined with hardness, a toughness giving great innate strength and resistance to wear. They have been submitted to temperature tests of 2,500 degrees, Fahrenheit, without disintegration, and it has been proven that they do not "pop"—break or flake—under heat generated in tube mills. The specific gravity is high. The symmetrical wearing, which is a characteristic of the pebbles, gives a maximum grinding surface during their whole life. These properties characterize the Canada (Arctic) Pebble as one of the best in the market for grinding raw material, coal or clinker.

W. E. MANHARD.

PEBBLES EVERYWHERE.

NEW CHICAGO CORPORATIONS.

Secretary of State C. J. Boyle has issued charters at Springfield to the following Chicago corporations:

C. E. Lillow & Co., of Chicago, incorporated with capital stock of $5,000, to deal in building materials. The incorporators are George F. Talty, James R. Considine and Dennis F. Considine, Jr.

The Standard Paving Company, of Chicago, incorporated with capital stock of $20,000 for general contracting and paving business. The incorporators are V. A. Wright, George C. Peters and Andrew Jaicks.

Chicago Foundation Company, capital stock, $10,000. General contracting, building and construction business. Incorporators, James F. Corrigan, George W. Dolan and Daniel Donovan.

FOR DODSON SOUTH CANAL.

The director of the Reclamation Service is asking for proposals for the construction of about 34 miles of the Dodson South Canal, Milk River irrigation project, Montana. The work involves the excavation of about 1,289,000 cubic yards of material, and is situated on the south side of Milk river near the main line of the Great Northern railway and in the vicinity of Wagner and Malta, Montana. The bids will be opened at the office of the Reclamation Service, in Malta, Montana, on October 14, 1912.

Springfield, Ill., Sept. 20.—Although the building permits in Springfield for August show an increase over those of the same month of 1911, it is doubtful if the total for the year will exceed that of 1911. The permits for August, 1912, were $143,175, and for August of 1911, $119,135. The bulk of the big buildings has already been provided for. At Peoria there was a big slump. Only $92,580 was shown against $324,016, last year. However, the permits this year for Peoria represents the building of substantial homes and no depression is felt.

We have received from The Contract Shoveling Company, of Knoxville, Tenn., copy of their latest catalogue which is a very attractive book and should be in the hands of every person interested. They have just shipped one of their machines to New York, where it will be used in the aqueduct work there.

LAYING OFF SHORE FOR CANADA PEBBLES.

pebbles unbelievably round and has sorted them into sizes ranging from grains of coarse sand to boulders.

The concentration of the pebbles occurs of course along the present beach line, but a succession of terraces extend some three miles from the lake, rising to an elevation of about four hundred feet above lake water-level; these terraces are all former beaches indicating earlier lake levels, and contain pebbles of the same material as those found on the present beaches.

While rock of the formation found on the beaches does not occur in the vicinity, it does some hundred and fifty miles north, and as the direction of flow of the Kewatin glacier was north to south in the section where Lake Superior now lies, the presence in that section of drift material similar to the rock mass in the north would be explained.

In the development of these beaches many difficulties were encountered, many of which are met with in any mining operation, and especially mining in northern climates. There was no experience or data to work on, but after an unprofitable season of picking by hand, plants of original design were installed for sorting, bagging and handling, the sorting as employed insuring a uniformity of size not to be obtained by hand picking, and the employment of high class labor in the selection of

BRADLEY PULVERIZER COMPANY.

The Bradley Pulverizer Co., Boston, Mass., has made arrangements for the manufacture of their Giant Griffin mill and parts at their Allentown, Pa., works, and are continuing the manufacture of the Bradley three-roll mill for fertilizer use in grinding phosphate rock and Florida pebble at their Boston works. This has been necessary on account of the demand for the Bradley three-roll mill for use in the fertilizer business.

On account of the successful operation of the Giant Griffin mill and its predecessor, the 30" Original Griffin mill, it has been understood that they only manufacture pulverizers for the cement plant. This is now only part of their large business, as the Bradley three-roll is being used in a majority of the fertilizer plants on account of its simplicity of operation and economy in up-keep with only thirty-five horsepower.

Not only are the phosphate rock-grinding people beginning to realize the value of the Bradley three-roll mill, but also the fire clay manufacturers are installing them for grinding tailings. One recent installation of a Bradley three-roll mill at the plant of the Olive Hill Fire Brick Company, Olive Hill, Ky., is giving an output of from 10 to 15 tons per hour at a very low cost of up-keep.

Another use for the Bradley three-roll is the grinding of limestone for agricultural lime purposes. This commodity is being used universally and is becoming very popular with the farmer. We have just installed one of these mills at Medina, N. Y., for this purpose, and the company is in receipt of some very flattering reports on the outcome of tests made at that plant.

Probably the reason for the great popularity of both the Giant Griffin and the Bradley three-roll is on account of their being self-contained machines, requiring no auxillary screens for procuring necessary fineness. This is a great point in favor of all their different mills and is required by the trade they serve. Auxilliary screens and the additional elevators they require are a source of trouble and expensive in up-keep and horsepower.

Another point in their favor is the fineness of the grind. It is a known fact that the Giant Griffin mill is the finest grinder on cement clinker that has ever been used. Also the Bradley three-roll mill will give a greater percentage of 200-mesh material. This is quite essential in both the grinding of phosphate rock for fertilizer purposes and the grinding of limestone for agricultural lime. Any one with ordinary judgment can operate the Bradley three-roll mill very satisfactorily.

It is now about twenty-five years since the company started to build Griffin mills and the company says there are more of their mills in successful use than all other mills combined.

Dudley O. Sayre, of Manistique, Mich., wanted a position. He advertised for it in the Classified Department of ROCK PRODUCTS.

Read the result from his own pen.

July 20th 1912

Rock Products
Chicago, Ill
Gentlemen

A few weeks ago I sent you an advertisement in which I sought a position, I received as many letters and telegrams in reply I hardly knew which one to choose but feel I have picked the right one, and will thank you not to run the advertisement any longer because the answers I have been receiving are more than I can take care of

Please accept my thanks for the prompt results your paper gives, there is certainly no need of any one being out of a position when they have a paper like Rock Products to advertise in that everybody in our line seems to read

Yours Respectfully
Dudley O Sayre

Let Us List Your Wants on This Page

Try Our Columns Next Month

CLASSIFIED ADVERTISEMENTS

Advertisements will be inserted in this section at the following rates:

For one insertion.....25 cents a line
For two insertions.....45 cents a line
For three insertions.....60 cents a line

Eight words of ordinary length make one line. Heading counts as two lines.
No display except the headings can be admitted.

Remittances should accompany the order. No extra charges for copy of paper containing the advertisement.

EMPLOYEES WANTED

Wanted—Capable and energetic Manager for limestone quarry. Steady employment and good salary to a man that can show good results. Men addicted to use of intoxicants not wanted. State age, experience and from whom recommendation can be had.
Address FLUX, care ROCK PRODUCTS.

Competent working foreman, capable of taking charge and looking after machinery of hard wall plaster mill and hydrating plant. One with knowledge of hydrating preferred. Apply, giving references, experience and wages expected. The Hull Wall Plaster Co., Hull, Que., Can.

Wanted—A first-class crusher man. Must be an educated and practical machinist. Must furnish reference, age and experience with application. Will pay good salary to the right man.
Address A. B. C., care ROCK PRODUCTS.

EMPLOYMENT WANTED

POSITION AS SUPERINTENDENT.

Position wanted as superintendent of lime works, by a hustler of fifteen years' experience, capable of taking full charge of plant, including quarry, and can be depended on at all times to keep things up to the minute, and in working order. Can furnish best of references from former employers and produce results. I am thoroughly familiar with Gas Producer and direct fire kilns. Also Hydrate Mill and Stone Crusher.
Address "RESULTS," care ROCK PRODUCTS.

Reliable and strictly sober practical mining man, 30 years' experience from door-boy to mine and quarry inspector. Will consider any gypsum property on a contract basis, deliver rock at mill at low cost per ton, or take position as foreman, superintendent or manager.
Address Contractor, care ROCK PRODUCTS.

Wanted—Positon as foreman or superintendent of Gypsum mining, thoroughly experienced and can handle men. Can furnish references as to character and ability.
Address No. 59, care ROCK PRODUCTS.

Wanted—Position as manager or superintendent for Rock Crushing Plant. J., care of ROCK PRODUCTS.

Wanted—Position as superintendent for gravel and sand plant. Address K, care ROCK PRODUCTS.

MACHINERY FOR SALE

For Sale—One 26" Shutz-O'Neil Limited Mill guaranteed to be in A1 condition.
The Paragon Plaster Co., Syracuse, N. Y.

FOR SALE

Steam Shovels, Locomotives, Cranes, Rails, Cars, Cableways, Air Compressors, Stone Crushers, Etc.
First-Class Released Material at the Right Prices.
WM. B. GRIMSHAW CO.
688 Drexel Bldg. Philadelphia, Pa.

For Sale—Bargain: No. 2 Foote concrete street paving mixer on trucks with steam engine and boiler. Price $275.00 Cost new $900.00. Condition guaranteed first class. Address WILSON MACHINERY CO., 3127 Shields Ave., Chicago, Ill.

FOR SALE.

No. 4D and No. 3D Gates Crushers, good condition.
No. 3 .....$275.00
No. 4 ..... 550.00
100 Stone Cars—Steel.
FRED A. PECKHAM, 20 W. Jackson Blvd., Chicago, Ill.

MACHINERY WANTED

WANTED TO BUY.

At once, several Water Lyner mine drills. Address FRED A. PECKHAM, 20 W. Jackson Blvd., Chicago, Ill.

PLANT FOR SALE

Stone Crushing Plant
For Sale, Fully Equipped

The Plant of the Biggsville Crushed Stone Company, together with lease covering 84 acres of stone lands. Stone of best quality, and very great depth. Plant along main line C. B. & Q. Railroad. Highest grade limestone dust, which is sold as fast as can be made. Ready market for all material made.

Best of reasons for selling.

Correspond with

Biggsville Crushed Stone Company
Biggsville, Illinois

Sand-lime brick plant, capacity 25,000 brick per day, ten hours. Bargain if taken at once.
HOLLAND CITY STATE BANK, Holland, Mich.

Tract of 123 acres containing bank of finest grade Concrete Gravel 15 feet deep, with railroad siding into pit and established business. Personal inspection requested. For particulars apply W. E. YOUNG, Anglesea, N. J.

BUSINESS OPPORTUNITIES

One Merillat Culvert Core, molds all sizes of Concrete Culverts. Send for Free Book on Concrete Culvert Construction.
Merillat Culvert Core Co., Box R., Winfield, Iowa.

STONE LAND.

For Sale—Several tracts of high grade limestone. Splendid location on water and railroad, suitable for flux, lime, cement, or for investment as prices are right.
Herman Besser, Alpena, Michigan.

Improved Steel Shell Lime Kilns—Iron, Brass and Aluminum Castings—Experimental or Special Machinery built—Heavy or Light Machine Shop Work—Wood and Metal Patterns—Estimates furnished.
A. P. BROOMELL, Manufacturer, York, Pa.

Located on Lines of Southern Railroad, Switches to Works, Broken Stone Proposition, with heavy Engines, Crushers and other necessary Machinery. Property near principal Cities of State, State Building Lots, Macadam Roads, will sell at bargain.
Address Arline F. Messick, Winston-Salem, N. C.

EXCLUSIVE CONTROL GIVEN.

Under our confidential trade note formulas and processes for the manufacture of concrete marble, decorative concrete, marble lumber, composition flooring, etc., by city, county or state licenses or by shop right license. No machinery required. Little capital, practically as yet. No competition. A profitable business proposition. For particulars address Art Stone Co., Box C, Waynesboro, Pa.

For Sale—Local Rights to make best concrete waterproofing compound on the market.
A. CHAPPLE, P. O. Box 517, Tuscaloosa, Ala.

For Sale—Large interest in Sand-Lime Brick Plant, splendid condition, 30,000 capacity, million cubic yards sand, Pennsylvania Railroad, territory uses 700,000,000 yearly. Box 43, Haddonfield, N. J.

FOR SALE.

Four Stratas Gypsum Rock under large farm. Seven test holes. Quality Best in State. Good shipping point.
M. J. Shivington, Mumford, N. Y.

DR. OTTO SCHOTT
Consulting Engineer and German Cement Expert
You are invited to visit our booth at the New York Cement Show, Madison Sq. Garden, Jan. 29-Feb. 3.
Office: Fifth Avenue Bldg., Madison Square, New York

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Personal, Expert Services. Fair and Reasonable Rates. 25 Years Before United States Patent Office
C. T BELT, Warder Bldg., Washington, D. C

NOVO ENGINES are used on all the best cement mixers in the country. Their simplicity, reliability and compactness make them best for contractors use.
Guaranteed against freezing damage. Send for Novo Catalogue
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222 Willow Street, LANSING, MICH.

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Special reports made on Quarries and Plants not producing results.

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Consulting, Mechanical and Chemical Engineer, in Designing, Construction and Operation of Plaster Mills (Kettle or Rotary Process), Elevating, Conveying and Crushing, Mechanical Drying, (Kiln or Rotary) and Hydrating Plants, Power Houses, Pumping Stations and Water Powers.
Examination, Tests, Analysis and Reports, Plans, Specifications and Superintendence of Construction.
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Notes on Testing and Use of Hydraulic Cement
Fred P. Spalding. Price $2.00.

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Bungalows, Camps and Mountain Houses
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Urschel Bates Valve Bag Co.
West Jersey Bag Co., The

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Koehler Co., Hy. L.

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Chicago Belting Co.
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Webster Mfg. Company.

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Martin-Henry Brick Machine Mfg. Co.

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Fowler & Pay.

CEMENT MCHY.

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Bradley Pulverizer Co.
Canada Pebble Co.
Cummer, F. D., & Son Co.
Jeffrey Manufacturing Co.
Kent Mill Co.
Miscampbell, H.
Novo Engine Co.
Raymond Bros. Impact Pulverizing Co.
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Chicago Portland Cement Co.
Copley Cement Mfg. Co.
Dexter Portland Cement Co.
French, Samuel H., & Co.
Kansas City Portland Cement Co.
Ironton Portland Cement Co.
Lehigh Portland Cement Co.
Meacham & Wright Co.
Northwestern States Portland Cement Co.
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Bonnell Iris Aggregate.

COMBUSTION ENGINEERS.

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Northwestern Steel & Iron Works.

CONCRETE BLOCK MCHY.

Francis Machinery Co.
Northwestern Steel & Iron Works.
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Northwestern Steel & Iron Works.

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Northwestern Steel & Iron Works.
Read & Morrill, Inc.

CONCRETE MIXERS.

Chalmers & Williams.
Miscampbell, H.
Northwestern Steel & Iron Works.
Novo Engine Co.
Standard Scale & Supply Co.

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Macneal, James B., & Co.
Ricketson Mineral Paint Works.
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Ersham, J. B., & Sons Mfg. Co.
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Link-Belt Co.
McLanahan Stone Machine Co.
Stephens-Adamson Mfg. Co.
Webster Mfg. Company.

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Ehrsam, J. B., & Sons Mfg. Co.
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Improved Equipment Co.
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National Lime & Stone Co.
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Webster Mnfg. Co.

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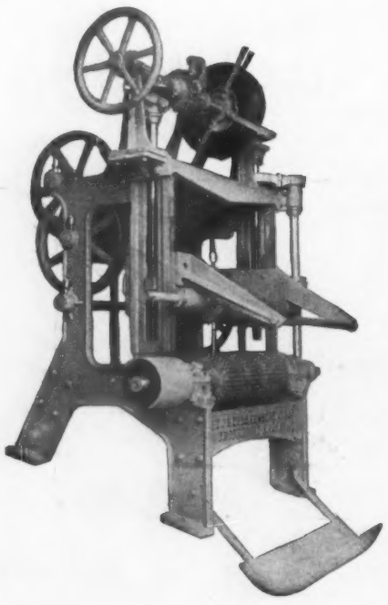
ROCK PRODUCTS

Index to Advertisements

SEPTEMBER 22, 1912

OUR CLASSIFIED SECTION ADVERTISEMENTS

Are the business mart of the industry — If you want to dispose of old machinery, to buy old machinery, to get a position, to hire any kind of help, to dispose of surplus stock, to sell your business, to buy lands or sell lands; place an advertisement in these columns. Advertisements cost 25 cents a line for one insertion, 45 cents per line for two insertions and 60 cents per line for three insertions. Try it. **ROCK PRODUCTS, 537 S. Dearborn St., Chicago, Ill.**



Points of Interest Concerning

The Ehrsam Wood Fibre Machine

The log feeds itself to the saw. As the log decreases in diameter the Speed of the log and of the feed INCREASES AUTOMATICALLY.
In other words, the Peripheral Speed remains constant.
The feed of the log to the saw is in direct proportion to the speed of the log.
This automatic uniformity of feed INSURES UNIFORMITY of FINENESS in the PRODUCT.
No frictional devices are used, none being necessary.
All the working parts are planed. All of the gears are cut from solid steel.
All of the parts are interchangeable and numbered, so that duplicate parts can be quickly obtained and easily put in position.
The Saw mandril is extra heavy and made of the best crucible steel.
The journals are chain oiling. No Machine can be more substantially built. Write for full information.

Okeene, Okla., June 14, 1911.

J. B. Ehrsam & Sons, Enterprise, Kans.
Gentlemen:—Some time ago I received a letter from you asking how the wood fibre machine you shipped us is doing. Will say it is the best I ever used. In regard to any suggestions I could make as to how it might be improved, will say that I can make none, as it is O. K.
Yours truly, SOUTHWEST CEMENT PLASTER CO.,
Frank Dodge, Sup't.

Manufacturers of Jaw and Rotary Crushers for Gypsum, Vibrating Screens, Hair Pickers, Wood Fibre Machines, Calcining Kettles, Plaster Mixers, Power Transmission

The Enterprise Vertical Burr Mill

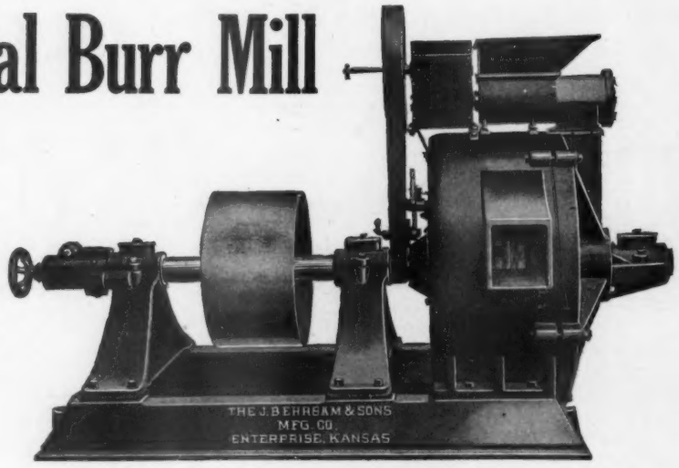
is especially designed for grinding gypsum, limestone, coal, coke, paint, rock, foundry facing, carbon, salt, and other similar substances.

It is STRONG and DURABLY built.

Has INTERCHANGEABLE STONES, which can be easily removed for dressing and replaced.

Is provided with our POSITIVE CONTROLLABLE FEEDER, which feeds an absolutely uniform stream into the mill at the required capacity.

MANY OTHER ADVANTAGES.



The J. B. Ehrsam & Sons Mfg. Co.

Designers and Builders of

Complete Equipment for Plaster Mills

ENTERPRISE, KANSAS, U. S. A.

A Message From Down East

THERE are a great many good dealers in this country who, for mighty good business reasons, will not be satisfied with anything short of the best. This means the best materials, the best in service and the most effective dealer co-operation in promoting sales. Of course, it always pays to be progressive.

In this space last month we showed you a letter from A. L. Bartlett Co., also their new motor truck "Delivering the Right Goods" at Rockford, Ill. And you remember they said this:

"After years of experience we say emphatically — **U. S. G.** Company's products first, last and all the time. We have tried nearly all the others." And here's what one of the many "satisfied" dealers down East thinks of the Progressive Line:

We also stated in this space last month and again repeat that many other good dealers in all parts of the country are saying the same thing.

The proof is quite positive that the progress of the **U.S.G.** Line is the progress of the Gypsum Industry. Every day accentuates this fact.

B. F. MARSH, President — Established 1880, Incorporated 1911 — R. H. WHITNEY, Vice-Pres. and Treas.

B. F. MARSH COMPANY

WHOLESALE AND RETAIL

Mason and Sewer Supplies

22 GARDEN STREET WORCESTER, MASS.

June 25, 1912.

United States Gypsum Company,
Chicago, Ill.

Gentlemen:-

Notice your ad on the back cover of the June Dealers' Record. Tell Bartlett he is right. We do not feel that we can afford to handle any other than United States Gypsum Co's products.

We have also tried them all.

Very truly yours,

B. F. MARSH COMPANY

Treasurer.

RHW/A

Member of National Builders' Supply Association

SACKETT Plaster Board	U. S. G. Finishing Plasters
GYPSINITE Fireproof Studs	ADAMANT Plasters (Interior and Exterior)
PYROBAR Gypsum Tile	U. S. G. Bond (Concrete) Plaster
U. S. G. Cement Plasters	U. S. G. Caen Stone Cement
U. S. G. Wood Fibre Plasters	CEMENTICO Decorative Wall Finish,
U. S. G. Prepared Plasters	Etc.

1912

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